

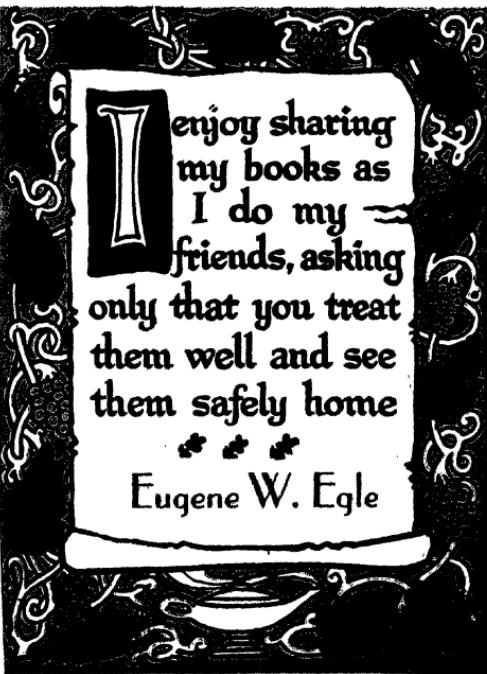
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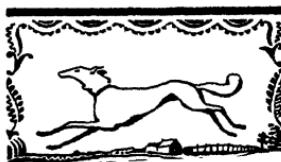
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Curtis
Guns and gunning



GUNS AND GUNNING

CAPTAIN PAUL A. CURTIS



ALFRED A. KNOPF: NEW YORK

1943

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*Manufactured in the United States of America
Published simultaneously in Canada by The Ryerson Press*

PUBLISHED NOVEMBER, 1934
SECOND PRINTING OCTOBER, 1943

To His Grace,
THE DUKE OF MONTROSE,
and
MR. IRA RICHARDS
*In memory of many pleasant
days on the heather*

THE author and the publishers desire to acknowledge their appreciation of the generous coöperation of *Field and Stream*, who have graciously afforded the use of many photographs and drawings from their pages, and of *The Dupont Co.* for permission to reprint the first chapter which the author wrote for them.

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CHAPTER ONE

The Story of Gunpowder

WHEN, where and by whom gunpowder was first put to practical use is obscured by the mists of the dark ages, but there remains little doubt that its composition was known to the ancient Chinese and Hindus. Probably its discovery was accidental, just as we presume that of glass to have been. Primitive people, cooking their meats over fireplaces on a soil strongly impregnated with niter, may have inadvertently brought charcoal and niter together, causing a mild explosion. And who knows, or dares say, when this reaction may have been noticed by one with a gift for investigation!

The use of gunpowder was in all probability limited to pyrotechnical display, yet there is evidence that it was known as a propellant centuries before the Christian era. In the Gentoo Code, compiled from Hindu customs and traditions reaching back into unfathomable antiquity, the following precept is found:

“The magistrate shall not make war with any deceitful machine or with poisoned weapons, cannons or guns, or any kind of firearms. . . .”

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And so Alexander the Great may have encountered firearms on his invasions of India in 326 B. C.; for Philostratus the Elder, an early Greek historian, in his *Life of Apollonius of Tyana*, mentions that Alexander's progress was arrested in the country between the Hyphasis and the Ganges by a people who "slew their enemy with tempests and thunderbolts shot from the walls." A few centuries later—275 A. D.—Julius Africanus writes of "shooting powder," and there are several other references in ancient manuscripts to what might be gunpowder.

The introduction of explosives into Europe came with the Mohammedan invasion. Mixtures closely resembling gunpowder were used at the siege of Mecca in 690 A. D. Gunpowder was used by the Saracens at Thessalonica in 904, and at the siege of Belgrade in 1073 by the Hungarians. And we are told that in 1218 there was artillery at Toulouse.

According to some writers, Friar Bacon, famous monk of the thirteenth century, was the first European to discover gunpowder. Others give the credit to Berthold Schwartz, a German monk, but both statements may be questioned. In the National Library of Paris there is a manuscript copy of *Liberignium*, dated 846 A. D., in which the author, Marcus Graecus, describes an explosive compound of six parts saltpeter, two parts sulphur and two parts charcoal—practically the same formula used to-

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day in producing plain black powder. From this it would appear that gunpowder was known in Europe at least 400 years earlier than is commonly supposed.

The early explosives were actually powders almost like dust. The ingredients were usually mixed on the battle-field just before use, so that the charges for guns must have been extremely variable in strength and as dangerous to the gunner as to his enemy. Moreover, gun metal was poor stuff when the first cannons were made; about five times as much weight of metal was required to handle a given charge safely as is used today.

The history of gunpowder is, of course, inseparably linked with that of firearms. No one can say when the first cannons were used in Europe, but it is known that a cannon was unearthed in 1560 in Germany at the castle of Heyer, which was destroyed in 1308. Whether it was used in the reduction of the castle, or was installed there at an earlier date, we do not know; but at any rate, in the archives of the City of Ghent there is record of a cannon belonging to that town in 1313. Although these old cannons commonly threw stone balls, and later iron ones, in time it became practicable to load certain guns with small stones and bits of scrap iron. This was the first application of the shotgun principle—and the forerunner of hand guns which at first were hardly more than small cannons.

This type of gun appeared first in Germany about 1380. It was essentially a metal tube braced against the

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breastplate of the user with the left hand, which also directed it, while the right hand held the match to ignite the charge. The shooter was called the culverineer; his weapon, a hand culverin. So quickly did these guns develop that in 1476 at the battle of Murat, the Swiss Army carried 6,000 of them.

Shortly afterward a crude stock for shooting off the shoulder was added, and the weapon took on the semblance of a gun as we know it. About 1480 the first lock, called a Serpentine, made its appearance. This marked a most important step in the development of early gunnery.

The original matchlock was nothing but a letter "S" reversed, the upper section holding the lighted match away from the touchhole until the lower section of the scroll was pulled back, just as we pull a trigger today. Later was attached a spring which snapped the match down upon the powder and materially improved accuracy due to its faster time.

The next improvement was the wheel-lock, invented in 1515. It consisted of a metal wheel, with serrated edges, which was wound up with a windlass, just as one winds up the mainspring of a clock. Against this wheel pressed an arm holding securely a piece of pyrites. On pressing the trigger the released wheel revolved rapidly and sparks from the stone were directed into the powder pan. With the adoption of the wheel-lock, guns for the first time came into use for sport. The inaccurate, slow-firing hand

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cannon and matchlocks rarely ever scored hits on game; but with the wheel-lock a comparatively quick shot could be made. Guns were generally used in Germany for game shooting in the middle of the sixteenth century. They were for the most part muskets, shooting a solid slug. Some of these early wheel-locks were even rifled.

In the *Autobiography of Benvenuto Cellini* we have an interesting reference to an early sporting gun which he himself made and fondly called his Broccardo. Armed with this "superb weapon" and with powder and ball, also of his own making, he used to go to ancient ruins where pigeons nested and there enjoyed the sport of shooting them. Using a powder charge one-fifth the weight of the ball, he declared that he could bring pigeons down at two hundred measured yards—and this was about 1525! Now Cellini was a romancer and boaster as well as a great artist and inventor. While we may discredit the excellence of both his gun and his marksmanship, his writings at least show that guns were used in that early day for feathered game.

About 1630 the flintlock was introduced to the rest of Europe from Spain, where it was invented, and its lock time was so greatly improved that soon afterward high prices were being paid for the guns. Improved flintlocks continued in use until about 1825; they were used in the British Army until 1840; in fact, they are still used by primitive people in Africa and South America.

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The excellence of the Spanish sporting gun was acknowledged until about 1775 when Nock and Egg and later Manton brought the superiority of British arms home to the entire world.

One great improvement was the percussion cap, invented in 1807 by John Forsyth, a Scotch minister. The first ones were paper caps, not unlike those used for toy pistols; subsequently caps were made of copper. Further reference will be made to this development later on.

Early in the nineteenth century the muzzle-loading sport gun reached a state of near perfection in elegance and beauty of lines and balance. For two decades before, game shooting had been left to gamekeepers and some favored tenantry who went afield to replenish the larders of their employer. Then suddenly sport came into its own and made equals, in its pursuit, of gentlemen and yeomen.

British gentry made a fetish of it. Everyone who could, raced harness and saddle horses, rode to hounds, broke their necks in steeplechases, shot, fished, coursed and fought cocks and dogs. If they could not afford to participate, they bet their last half crown upon the results.

Naturally, shooting received its fair share of attention. Pheasants were introduced and game breeding was established. People went miles to see a matched shoot between two noted shots, at trapped pigeons or at wild game over setters and pointers.

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One of the greatest exponents of wing shooting in that day was Colonel Peter Hawker. He began with flintlocks in 1802, and ended his long shooting career in 1853, as a staunch supporter of the detonator or percussion lock. The Colonel's shooting records have hardly ever been equaled, let alone surpassed. His diary entry for October 13, 1813, mentions that he "killed eighty-five head of game, mostly partridge, and missed six with a 22-gauge gun."

Again under the date of September 16, 1817, he says: "I never had such a satisfactory day's shooting. I had eight doublets and bagged both my birds every time. . . . I made thirty-seven head of game in thirty-six shots, having once killed two birds with one barrel. . . . I had my favorite 14-gauge barrels of Joe Manton's and Mr. Butt's cylinder powder." In 1837 he fired eighty-three shots in four days, missed once, and bagged eighty-nine head of game. Hawker probably was among the first to use percussion caps for sport, between 1820 and 1825, and expressed his doubt as to their general usefulness. He later enthusiastically recommends the detonator gun, particularly to those who are only fair shots. But he points out that one must be careful not to shoot too far ahead. . . . "If you have a detonator make only half the allowance."

Speaking of the gunmakers' complaint about dull trade,

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on one occasion he observed that they had brought it on themselves by introducing the detonator system.

"When flintlocks were the order of the day few gentlemen of distinction ever thought of using anything but a gun by a first-rate maker, for the simple reason that on the goodness of the work depended the quickness of firing. But nowadays every common fellow can detonate an old musket; insomuch that all scientific calculations in shooting at moderate ranges are so simplified that we every day meet with jackanapes apprentice boys who can shoot flying and knock down their eight out of ten birds."

No longer did one fear a windy day when the spark might blow from the pan. One still had to contend with his high beaver hat, powder flask or shot pouch, but he was reasonably sure that his piece would fire when required. No longer did he carry the lock of his gun under his coat-tail on a drenching day in stalking wild fowl, only to have it let him down by a misfire, despite all caution, at a critical moment.

Great were the arguments in the sporting gazettes as to the relative merits of different sizes of shot, various granulations of powder, length of barrels, and so on. Indeed, the gun crank, it seems, is as old as the gun itself. He complained of the difficulty of securing good powder, and specified his preference as to granulation for different size guns, but there was still only black powder to be considered.

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The percussion cap made possible the practical development of the breech-loading gun with its attendant ready-made cartridges, several versions of which appeared in France about 1830, chief of which was the Lefaucheux, made in 1836.

This breech-loading gun did not meet with instant approval when it was introduced to England in 1853. Its speed of fire was, of course, admitted, but this was far overbalanced by its shortcomings, chief among which was its relatively weak killing power.

As I write, I have before me a copy of *The Dead Shot*, by Marksman, published as late as 1873, in which he weighs carefully the pros and cons of the case. He says: "I do not wish to discourage those who possess breech-loaders; they will find them useful for every purpose but wet days and long shots. As regards to myself, I use breech-loaders for tame game."

He states the case for this gun as follows:

1. The simplicity and quickness with which it may be reloaded. The risk incident to carelessness in loading one barrel while the other is charged and at full cock is entirely obviated.
2. The ramrod, loading rod, powder flask, shot pouch and cap holder are all dispensed with.
3. Much of the time, risk and waste of ammunition in drawing a charge are obviated.

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4. The breech-loader may be charged in rapid succession.

5. The powder in its pure state is deposited in the gun on a wet day without danger from moisture.

6. The barrels may be cleaned with greater facility.

7. Breech-loader is the safest in the hands of a nervous, careless or excitable sportsman.

On the other hand:

1. The breech-loader is of necessity much heavier than a muzzle-loader of the same gauge.

2. The breech-loader does not shoot so strong nor kill so far, even though allowed an extra quarter of a dram of powder.

3. It is more expensive as regards ammunition, and also as to the gun itself, and is more liable to get out of repair.

4. The recoil is heavier and the report louder.

5. Cartridges stick in wet weather and dampness penetrates the gun more easily.

6. There is more risk of bursting; indeed the breech-loading action becomes doubtful after much usage, particularly from the trying usage of heavy charges.

7. The time and trouble required in loading cartridges and the danger attending the operation and the expense if they are loaded to order by the gunmaker.

8. The great weight of the ammunition which must be carried, and the difficulty of keeping the cartridges

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in good condition, particularly as pertaining to dampness.

These are the major defects in Marksman's eyes, and he then gives the minor defects of the breech-loading system.

He referred chiefly to the pinfire guns of the Lefaucheux type, though most of the others of the time were equally clumsy and weaker in construction. Many and weird were the methods of bolting them—some had sliding barrels, some turn-over barrels. Jeffery's made one with a side-motion barrel. Then came the side-lever of Nedham, then the under lever, and finally the perfected top lever with the still famous Greener cross-bolt.

By this time the breech-loader was past its puny, ineffective stage; better still, the ammunition for it was being made intelligently and reliably, so the guns could hold their own in fast company with the muzzle-loaders. The pinfire cartridge of the Lefaucheux had passed into the discard, and the center-fire cartridge had taken its place. Right upon its heels came the hammerless action, and in 1876 the famous Anson & Deely action appeared. Gradually the shotgun was developed until finally arrived the perfected choke-bored, hammerless, ejector, side-lock gun of today—an arm costing well up to twelve hundred dollars in the best grades, by a topnotch maker, and well worth it.

From the foregoing it is clear that guns developed

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steadily for five centuries, but, strange to say, powder did not develop in a corresponding degree. Remembering that gunpowder was known in continental Europe as early as the middle of the ninth century, it would seem that the English-speaking people should have made use of it much earlier than they did, and that considerable improvement should have been made in its manufacture. Yet as late as the reign of Henry VIII, it is of record that among the presents sent to him by the king of France, prior to their historic meeting on the famous Field of the Cloth of Gold, was a barrel of gunpowder.

Apparently little progress was made in the manufacture of gunpowder until the sixteenth century when it was granulated as we now make it. In fact, its production in England dates only from the reign of Queen Elizabeth, at which time several mills were set up in Kent.

It may seem strange that the manufacture of gunpowder in England should have been undertaken at such a late period, considering that facilities for manufacturing it on the continent had been established so long. But the superiority of the English longbow over the crossbow, or arbalest, of Europe was, I believe, largely responsible for the tardy adoption of firearms in England. Moreover, our forebears were apparently very reluctant to abandon the accoutrements of knighthood—the lance, the axe, the sword and protective armor—in favor of firearms.

About 1790 the manufacture of gunpowder had pro-

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gressed to the extent that it was quite as good as the black powder of the present time; and no further improvements of note were made until the middle of the nineteenth century when Colonel Schultze, a German artillery officer, discovered the process of making from wood an entirely different kind of explosive which was first known as white powder or wood powder. It consisted of pellets of wood which were carefully purified and nitrated and then impregnated with barium nitrate. Schultze powder was one of the earliest shotgun propellants of the smokeless type. Since the advent of this powder, the manufacture of sporting ammunition has steadily improved.

Some authorities have implied that explosives made very rapid strides since the invention of smokeless powders. Yet, in reviewing their history, I can find no justification for this claim. Though nitro compounds were produced much earlier, it was in 1864 that Colonel Schultze invented the shotgun smokeless which bears his name and which was the first really satisfactory one to appear. Sportsmen did not take kindly to it, and it remained in a more or less experimental stage for about ten years. We find that in 1876 the editor of the *London Field* was still staunchly holding forth for black powder.

As a point of fact, to this day we probably have no powder as generally satisfactory under all conditions and for every purpose in any gun as the old reliable black—one as easy to load and as unaffected by climatic condi-

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tions, temperature, variations in loading pressure, weight of charge, and so on. The disadvantages are, of course, its objectionable screen of smoke, fouling of the gun, and a heavier recoil.

The original Schultze powder was suitable only for use in shotguns and in low-power rifles of that day. Later, it was improved by the use of purified cotton instead of wood pulp, and we derived the name guncotton.

Such soft-grained powders are still largely used, and the density is controlled so that they can be loaded, bulk for bulk, with the old black powders in the same type of shell, using the same powder measure.

In 1882 Nobel invented Ballistite. This was produced by gelatinizing nitrocotton with nitroglycerin. It was rolled into sheets and then cut into small grains, but it was not until 1884, when Vieille invented his powder made from nitrocotton colloided with a mixture of ether and alcohol, that a marked advance was made. These powders were dense; that is, they could not be loaded bulk for bulk with black powder but had to be weighed out on the scales, as they generated far greater power from a greatly decreased volume. The compounds and basic materials may vary in one brand of bulk or dense powder from another of the same type, but the principle remains much the same.

It was not until 1894, when the first hard-grained nitro-cellulose powder was put on the market, that we had a

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really first-class smokeless shotgun propellant, and from that time until 1920 there was no material improvement.

Where this will all end we cannot say; in fact, there is no end. Improvement will continue. Sometimes we shall rush ahead with a sudden spurt, as in the past few years; again we shall appear to stand still, but all the time the tendency will be toward better arms and better ammunition.

I shall not presume to say, as so many of our predecessors have, "this is the ideal load," or "no better gun can be produced." Without progress we would perish. There is no limit that I can visualize to the sporting gun.

It is even dangerous to predict what the gun of the future will be like. Several years ago I rashly ventured to do so and now regret it, for I can see where I was wide of my mark. But I still insist that almost any improvement that now seems possible in our future guns hinges upon the development of still better ammunition, though there may come, any day, an outstanding discovery which will revolutionize the shotgun and the rifle.



CHAPTER TWO

Elementary Rifle Practice

THE first thing for the beginner to keep in his mind in learning to shoot is a clear picture of the appearance of his sights in relation to the target, and this can best be explained by an illustration such as is shown herewith. It will be noted that whether one is using an open or a peep sight, whether he has a bead or a square post for a front sight, the general principle is the same. The front sight should be held exactly perpendicular, and its top should just touch the spot which one wishes to hit without covering it.

Some people—particularly target shooters—adjust their sights so that the point of impact will be several inches above the aiming point. There is an obvious reason for this in target shooting. When the bull's-eye is rested on top of the front sight so to speak, if the rifle were shot pointblank, the bullet would strike below the center of the bull and usually score fours instead of fives.

On the other hand if a man is shooting at a four inch bull's-eye, the exact center of which would be two inches from six o'clock, and he sights his rifle to hit two inches

ELEMENTARY RIFLE PRACTICE



PEEP SIGHT ON GAME



TARGET HOLD WITH
OPEN SIGHTS—AS IT
SHOULD BE



FRONT SIGHT HIGH
BULLET STRIKES HIGH



FRONT SIGHT LOW
BULLET STRIKES LOW



SIGHTS CANTED RIGHT
BULLETS HIT RIGHT
AND LOW



FRONT SIGHT RIGHT
BULLET STRIKES RIGHT

APPEARANCE OF THE SIGHTS IN RELATION TO THE TARGET

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high, by resting the bottom edge of the bull's-eye on the top of his front sight, he can, if his hold is steady, hit true center and secure bulls and at the same time get a very clear definition of his target.

When the rifle is sighted as I recommended for sporting use so that one holds right up to the exact spot where he wants to hit, the front sight and the bull, which are of the same color, are liable to blur and run together, and one cannot tell definitely how high into the bull he is holding. In shooting game, however, the front bead is usually of gold or ivory, against which game of any color will distinctly stand out.

The next consideration is always to hold the rifle straight so that the front sight post or the neck of the front sight, if it has a bead, is exactly perpendicular. When it appears slanted to one side or the other as in the diagram, which is called canting the rifle, the shots will not go straight, but are deflected in the direction in which the rifle is canted. In other words, if the barrel is slanting to the left so that the front sight looks like the leaning tower of Pisa, the bullet is sure to go to the left. The amount of the deflection depends, of course, on the extent of the cant and the range in question, but a cant so slight as to be perceptible to only a skilled marksman is sufficient to cause the point of impact of a bullet to be deflected three or four inches at one hundred yards, which would mean twelve inches at three hundred.

ELEMENTARY RIFLE PRACTICE

The question of the type of sights to use will be taken up in a separate chapter where due consideration can be given to all conditions.

Next in importance to carrying a proper mental picture of the relation of the sights and the target, is the question of trigger let-off. I use the term "let-off" because trigger "pull," as it is commonly called, is a misnomer. No one ever hit very much if he pulled the trigger. "Press the trigger" is better.

We are told by those of the military school that the trigger should be slowly squeezed off; in other words, with the index finger on the trigger the whole hand should squeeze the grip of the stock until the sear is released, the theory being that all jerk is eliminated and as the shooter is not aware just when the explosion will come he will not flinch. This theory is excellent so far as the training of raw recruits is concerned on the military range from the prone position and strange as it may seem, soldiers are instructed in rifle fire for target shooting and not for field conditions. It does not take an expert to realize that this theory of trigger release is utterly impractical for the hunter taking a quick shot at a bounding deer. It is in fact equally impractical for offhand target shooting. Can anyone imagine slowly squeezing the trigger and at the same time keeping his sights aligned with running game until eventually the rifle went off?

I maintain that pressure should be lightly applied to

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the trigger with the index finger as the aim is started and completed when the sights are in line with the mark; in other words, the gun should go off when he wills it to and if the majority of expert offhand shooters did not agree with me, we would not see so many set triggers being used for competing in this game today.

The trigger pull should be crisp and clean, not soft and draggy. That is, it should not half give way and then let go nor should it be what the rifleman calls creepy. Let go a little bit and then halt and give way some more. There should be no indication of the trigger releasing the hammer until sufficient pressure has been brought to bear to make it suddenly give way as if you had squeezed an egg. You cannot feel any tendency on the part of the egg to give way under pressure until suddenly it bursts in your hand.

Some authorities assert that the rifleman should never know just when his trigger is going to let go. If he does know, it is inclined to cause him to flinch and flinching is one of the most difficult things to overcome. Personally I do not agree with them. Excellent scores are made with hair triggers, when the rifleman knows that his piece will fire the moment he touches the trigger.

Trigger pull in the average sporting rifle should be about four pounds. Sometimes match rifles have trigger pulls of from 2-1/3 to 3 pounds and some of them are even fitted with double set triggers, which permits a let-

ELEMENTARY RIFLE PRACTICE

off of only two or three ounces. These are acceptable when used solely for the offhand target range, but they are very dangerous for practical hunting and are not conducive to good marksmanship. Observation has led me to believe that, as a general rule, even the expert shoots better with the standard trigger pull than with an excessively light one.

One of the drawbacks of double or single set triggers is that when not set the normal pull is usually about eight pounds, and each time you fire the rifle you must reset it.

I had one experience with a double set trigger on a deer hunt some years ago. The rifle had a release of four ounces when set and eight pounds unset. It was too dangerous to stalk with the trigger set, but if I left it unset vital time was required to set it when a deer was jumped. Furthermore, with the trigger set one was liable to apply the pressure on a running shot, before the sights were on the game, while if one did not set it the atrociously heavy pull was sufficient to make him wobble off a good size deer at short range.

As a result I never did connect with a deer using that rifle, for I never had a chance for a standing shot, where the set trigger was practical.

Of course, it is quite obvious that a very heavy pull is equally bad. This also causes one to flinch and the heavier the pull the more chance there is of diverting the aim

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through pulling the muzzle off the mark. You occasionally find arms with atrocious trigger pulls up to eight or nine pounds. One of the chief faults of the little .22 in the cheaper grades is the fact that quite frequently one purchases a rifle that weighs $4\frac{1}{2}$ pounds and has a 6 pound trigger pull. Naturally one cannot shoot very well with such a weapon. When the trigger pull outweighs the weapon, the shooter is almost certain to pull the sights off the mark.

The next consideration is steadiness in holding. A novice reads about the deadly cool marksman who, with nerves like ice, holds deliberately on the mark and kills his opponent or hits the ace of spades at fifty yards every time. There are men that come very close to hitting the ace of spades at fifty yards every time under ideal conditions, but this feat is not accomplished by steady holding. Literally speaking, steady holding is absolutely impossible. The steadier a man's nerves become, the nearer he can hold to the center, but as long as the heart beats there is bound to be a certain amount of vibration. The extent to which this affects the aim is largely overcome through practice.

In the first place, the shooter should learn to take a deep breath just as he raises the rifle, then slowly let out about half and hold that remaining until the trigger is released. If, when shooting from the offhand or standing position, he reaches the point where he feels that he can-

ELEMENTARY RIFLE PRACTICE

not hold his breath any longer, he knows beyond any doubt that he had dwelt on his aim too long, and he will do better by putting his rifle down from the shoulder, resting for a moment and starting over again. Of course, when one is shooting from the prone position, he can take and hold a dozen breaths without removing the butt from the shoulder, because then the rifle is resting upon the elbows which are dug into the ground. This element of breathing practice is one of the great factors in attaining skill with the rifle, but it must be practiced with a sense of time.

One will soon realize that he cannot, despite the greatest steadiness, hold his sights on the target; they will wobble back and forth. But he will discover that with practice he can time the wobble of his sight so that he will let his shot off just as the front sight swings on to the target. No matter how steady a man may be, and how perfect his form, without this sense of trigger time, he can never become a fine shot.

The next thing is stance and for the practical rifleman this can best be explained through the medium of the illustrations which are used herewith.

The accompanying sketch shows the offhand position as most quick game shots are taken and the position in which the beginner should get most of his practice. It will be noticed that the shooter is not directly facing the target but is quartering toward it. The left foot is advanced on



THE OFFHAND POSITION

a line with the target. The right foot is placed at an easy distance behind and about twelve inches to the right. In this position one finds the target at such an angle that the rifle is brought up across the chest. The right elbow is held a little higher than the horizontal position. When this is permitted to sag, it tends to drag the rifle over or cant it to the right.

The rifle is raised comfortably to the shoulder without undue cramping of the head. This, of course, largely depends on the fit of the rifle—another subject which will

ELEMENTARY RIFLE PRACTICE

be taken up in its proper place—but it can be adjusted to suit one's convenience by hunching the entire shoulder up if necessary to raise the sights in line with the eye.

One should not lean far forward off the center of balance. This will cause unsteadiness. Leaning back too far has a tendency to do the same thing and is particularly bad when a rifle with heavy recoil is used. Occasionally the shooter may wish to adopt the old Schutzen Stance, which is a very steady one for a single shot at standing game or target with a heavy rifle of mild recoil, but cannot be used successfully for running shots with a high velocity rifle. Moreover, a modern rifle would need to be specially restocked if the shooter wished to use this stance.

The tendency to have the feet too close together causes the body to sway too much, and to be overbalanced by the recoil of the rifle, but spreading the feet too far apart also results in unsteadiness. In fact, anything one does in shooting which is not comfortable is liable to increase unsteadiness.

One of the important factors in offhand shooting is the position of the left arm. It should not grasp the forearm too far out toward the muzzle. This makes it very difficult to hold steadily and is fatiguing if the rifle is heavy. Generally speaking, the best hold is to permit the forearm to rest lightly with the palm of the hand midway between the trigger guard and the fore-end tip. It, at least, should be far enough back to permit the upper part of the fore-

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arm to be held snugly against the left breast. Some people prefer to shoot with a fully extended arm, but the average man can do best with the arm drawn back.



KNEELING POSITION

The accompanying sketches show other common positions. The kneeling position is not at all desirable, being far from steady, but it is nevertheless steadier than the offhand position and is one into which the shooter can sometimes drop quickly for a sudden shot. A better position for sporting use at long range or where one has the opportunity to take a steady hold is sitting, as shown, with the heels dug into the ground and the elbows resting well forward on each knee. This position also should be such that the shooter is facing at about two o'clock from his target so that the rifle is brought across the body.

ELEMENTARY RIFLE PRACTICE



SITTING POSITION

In the prone position the shooter's body should again be facing two o'clock in relation to the bull. Not only does this in every case increase steadiness, but it allows the shooter to get the eye closer to the rear sight, which is advantageous if the sight is properly placed, and it also tends to reduce the effect of recoil. If one were to shoot with the body straight behind the butt of the gun, the recoil of the rifle would encounter greater resistance. When the body is diagonal to the point of aim, it is rocked by the force of recoil.

In each of these positions advantage can be taken of the strap hold as devised in the army. This consists of slipping the arm through a loop in the sling strap, which is adjusted so that the forward part of the strap is taut, bringing the left arm back snugly against the body and

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lifting the rifle into the shooting position. This tends to increase greatly the steadiness of the muzzle. It cannot be used at all times for quick shots, but a rough and ready hold can be adopted by putting a loose sling around the arm. Any sling hold will increase by about twenty percent the shooter's ability to group his shots.

All this will seem to be a great deal for the beginner to keep in mind. It is for the first few days, but bear in mind it has been my personal experience to develop some very creditable shots in a week from men and women who never previously had a rifle in their hands and make splendid shots out of them in a month's practice, so it is not nearly as hard as it seems. In fact, though I know some people resent the statement, it has always been my opinion that skill with rifle and shotgun is grossly overestimated. The average tyro believes it is much more wonderful and difficult than it really is. Beyond all doubt, a man with normal eyesight, nerves, and strength, with proper instruction can develop into an expert rifleman.

When I was in the army during the war, one expert in fifteen was considered good.

I would suggest for the beginner the so-called dry practice. That is, snap practice with an unloaded rifle, after the instructor has taught him how to mount his gun to the shoulder properly in the standing position. Let him try to hold on the bull's-eye and slowly and carefully squeeze the trigger until it lets go, trying all the time to

ELEMENTARY RIFLE PRACTICE

hold the front sight in line with the bull. He cannot actually accomplish it because as the trigger is released there is a noticeable jump in the rifle, but it is excellent practice.

Generally speaking it would be best for him to begin with a .22 rifle. If possible one of good grade, normal weight, and fair proportions. This greatly aids marksmanship, but unless a man has acquired the viewpoint of the out and out crank and loves .22 calibre shooting for itself, I think that in time the small cartridge will pall upon him. It has been my experience that the tyro's enthusiasm is increased by the use of a larger cartridge.

At first he should not attempt anything too hard. It is quite good enough to start in shooting at a four-inch bull at twenty-five yards, but the first one hundred shots should teach him enough to cut this in two. When he is able to get all of his shots offhand in a two-inch circle at twenty-five yards from the prone position, most of the battle is won. When he can get his group in a four-inch circle at fifty yards and an eight-inch at one hundred yards offhand, he has something to be proud of, but he will not be a good shot until he can hold his group down to three inches or less at one hundred yards from the prone position.



CHAPTER THREE

The .22 Rifle

IT IS no exaggeration to say that the .22-calibre rifles overwhelmingly outnumber any of the sporting rifles in use today. In fact, I believe that I am safe in saying that the production of .22's at the present time exceeds that of all other sporting calibres combined.

I do not recall the staggering figures representing the millions of .22 cartridges produced by the munition industry each year, but the number reads like the estimated mileage from the earth to the nearest star. They are used by all kinds of people, both young and old, in all kinds of rifles, and one might say for all kinds of purposes. It follows that there is an enormous variety of different models of rifles to consider.

It is entirely unnecessary to list them all here. For the purpose of this volume it should be sufficient to mention the most popular and best designed of the various types.

One need not spend much money to get a reliable .22 rifle. Within the past few years they have been vastly improved. Formerly, with the exception of the Stevens Ideal Model and the Winchester Falling Block action single

THE .22 RIFLE

shots, they were all too juvenile in their proportions to promote the accuracy of which they were inherently capable in the hands of a man of average size. With no exception the repeaters were all too light in weight for steady holding. The trigger pulls were too heavy for the weight of the guns. Quite frequently one would see a rifle weighing five pounds with a trigger pull of seven or eight. Obviously one could not shoot such a rifle with any degree of accuracy. The factory sights were too crude to ensure very fine results. Given a larger stock, fitted with target sights and a doctored trigger pull, they deserved serious consideration, for in strength, accuracy of boring and freedom from jamming, when treated with reasonable amount of care, they left little to be desired. But, of course, few people took them seriously enough to care to go to additional expense, which far exceeded the cost of the rifle.

After all as issued, they represented, and still do, about all the refinement in a rifle which the average man or boy is capable of appreciating.

The .22 is still looked down upon by the mass of the people as a sort of toy. The average rifle purchased is one of those light-weight, poorly-sighted repeaters of the trombone action variety, selected with the idea of taking it on a summer camping trip to kill the odd woodchuck or crow and an occasional rabbit for the pot, but principally to do informal target shooting of the tin can plug-

GUNS AND GUNNING

ging and bottle smashing variety. Neither the quality of the rifle nor its care is given much thought. It is for that reason that it wears out so quickly and has to be replaced by another model in a year or two.

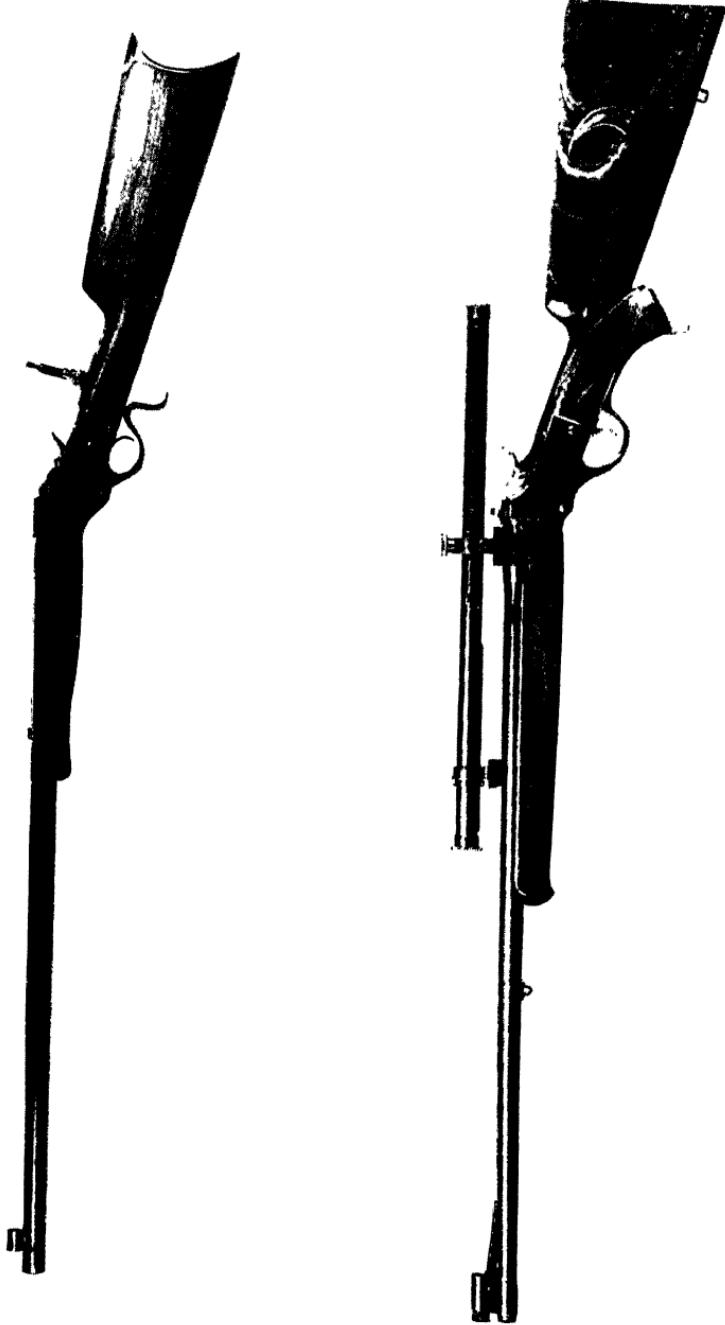
I used to think that the little Stevens Favorite, single shot, was the best for the boy to begin with, but the Remington, Winchester and Savage Companies have recently brought out improved .22 single shot, bolt action rifles of most advanced type with 24" barrels, perfectly adjusted trigger pulls, large stocks of first class design, weighing in the neighborhood of five pounds, which far surpass anything of that nature which we had before. Any one of them is ideal for the beginner.

However, the average man does not want a single shot rifle.

Of the many slide or trombone actions, call them what you will, it is only necessary to mention three that are outstanding.

First, the old standby of the shooting galleries which we find in all degrees of antiquity throughout the country—the Winchester Model 1890, from a mechanical point of view still as good a rifle of its kind as is made. Its single outstanding advantage for the beginner is the exposed hammer which is obviously safer in his hands.

Secondly, the time-honored, Remington Model 12, a hammerless rifle of the same type and, lastly, the new Winchester Model 61 which is equipped with a pre-



THE STEVENS FAVORITE .22 RIFLE
A Good Little Rifle for the Beginner
THE WINCHESTER .22 HORNET

By John Dubiel

THE .22 RIFLE

eminently superior stock and fore-arm of man sized proportions. This is a hammerless, tubular magazine rifle, similar in construction to the Remington Model 12, but weighing a pound more, which is an additional advantage. Such a rifle is excellent for informal target shooting at 25 to 50 yards, where the average man would use it. It makes a good squirrel rifle when properly re-sighted, and because of its speed of fire is particularly to be recommended for those who make a practice of hunting rabbits and hares with a rifle.

True, for this purpose we have the automatics, but in the early models they are hardly desirable. The Winchester No. 03 and the Remington No. 16, which were the first .22 automatics produced in this country, were made for special cartridges which are not interchangeable with the .22 L. R. They are lacking in killing power, due to the exceptional hardness of the bullets used which do not upset readily on impact. And they are inferior in accuracy because the bullets are crimped into the shells and the chamber tolerance has to be considerable. If they were bored tight they would be liable to jam frequently. This is a weakness in the automatic principle as loose chambers are never conducive to accuracy.

The later Remington Model 24 shoots the standard .22 L. R. cartridge, and in this respect is immeasurably superior to its predecessors, but it is unfortunately so extremely miniature in all of its proportions that it could

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hardly fit either a man or a small boy well enough to promote really accurate marksmanship. It can, of course, be restocked by a master gunsmith if one is willing to undergo the additional cost.

A better solution to the problem is the new Winchester Model 63, a revised version of the .03, being equipped with a heavier barrel than the original model, with the action altered to accommodate the .22 L. R. High-Speed ammunition and equipped with a man sized stock with full pistol grip, high comb and a shotgun butt and a correspondingly heavy fore-arm. In this model the .22 Automatic is, as it should be, more than a toy.

In between the trombone and automatic repeaters, before we come to the more ambitious bolt action variety, there is one other weapon which deserves mention, the lever action Marlin No. 39. This delightfully proportioned little rifle, moderate in weight and extremely accurate, has always been my favorite for small game. It was designed in 1897 and is still one of the most popular rifles made in this country.

Of the bolt-action .22s for game shooting I would consider the Winchester Model 57 and the Remington Model 34 NRA type, the most useful. They are splendid arms for squirrel shooting, properly provided with adjustable peep sights, excellent stocks and good trigger pulls.

The principal difference between them lies in the fact

THE .22 RIFLE

that the Model 57 is of the box magazine type, loaded with a clip, while the Remington Model 34 has a magazine of the tubular type. The Winchester weighs five pounds and the Remington five and three-quarter pounds which is in favor of the latter.

They are ideal pieces for the farmer's boy to use for killing stray hunting cats, woodchucks and crows in his father's corn. Furthermore, when equipped with a sling strap for steady holding, they are worthy of serious consideration for target shooting, even at ranges up to one hundred and fifty yards.

Of course, the man who is going in for competitive target shooting would want a heavier weapon (about 8 to 8½ lbs.) with sights capable of the most minute adjustment. If that is the type of weapon required there are only three rifles to consider—the Winchester Model 52, the Springfield M-1, and the Savage No. 19 NRA 1933 type.

The Winchester No. 52 is in my opinion the finest finished and best designed small bore repeating rifle ever produced. The Springfield is its equal in accuracy and reliability but much cruder in finish, and is a made over rifle using the action of the .30 calibre service rifle altered to take the .22 load. The idea back of it was to provide a rifle for practice and training in the army that could be used indoors and on short ranges to familiarize the recruit with the large bore service rifle which he

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would use in the field. An excellent idea so far as the army is concerned but I see no reason why the sportsman should use a rifle with the long bolt throw of the Springfield to function a miniature load.

If one does not want to pay the price of Model 52 or the M-1, a less expensive rifle of similar character which is equally accurate and capable of just as fine adjustment is the Savage Model 19 NRA 1933 type. In my opinion this is the best rifle for the money ever offered by the firearms industry.

It must not be assumed that these rifles are limited to target shooting. They are as satisfactory for game as any other .22 so long as speed of fire is not a factor. They are not as desirable as the trombone rifles for shooting running rabbits and hares, or for the occasional man who essays to kill flying game with a rifle. They are pre-eminently the best rifles for small game if one insists on using the .22 L. R. cartridge for vermin, a practice of which, by the way, I do not approve.

Within its limited range, the .22 has been for years the most accurate cartridge which has ever been devised, but as a game cartridge, its power is still woefully lacking. A .22 Short was never fit for anything but rats and sparrows about the barnyard. The .22 Long is obsolete, the .22 L. R., even with the hollow point bullet, should never have been used for anything larger than gray squirrels and rabbits or crows and hawks. For squirrels

THE .22 RIFLE

it filled the bill because anything larger seemed to mutilate them too much, and as they are generally shot at under fifty yards its extremely high trajectory was not glaringly apparent.

In the hands of an experienced rifleman who knew how to judge his range correctly this cartridge would do surprisingly good work. Such a man could occasionally make an astoundingly long shot with it on other and larger game. Nevertheless, to use habitually, on such tough little animals as woodchuck, a load with a muzzle energy of only 112 pounds, and such a high trajectory that one had to guess within a few feet of the actual range at anything over seventy yards or one would under or over shoot, was nothing short of downright cruelty.

Within the last few years big strides have been made in the improvement of .22 ammunition. This has been brought about through the development of a new type of powder which when loaded in a tough brass case, instead of the old time copper variety, permits the pressure to be run up from 14,000 to 24,000 pounds to the square inch in suitable rifles of .22 L. R. chambering. This has resulted in giving the little cartridge a new lease of life with twenty-five percent higher velocity and nearly fifty percent more energy.

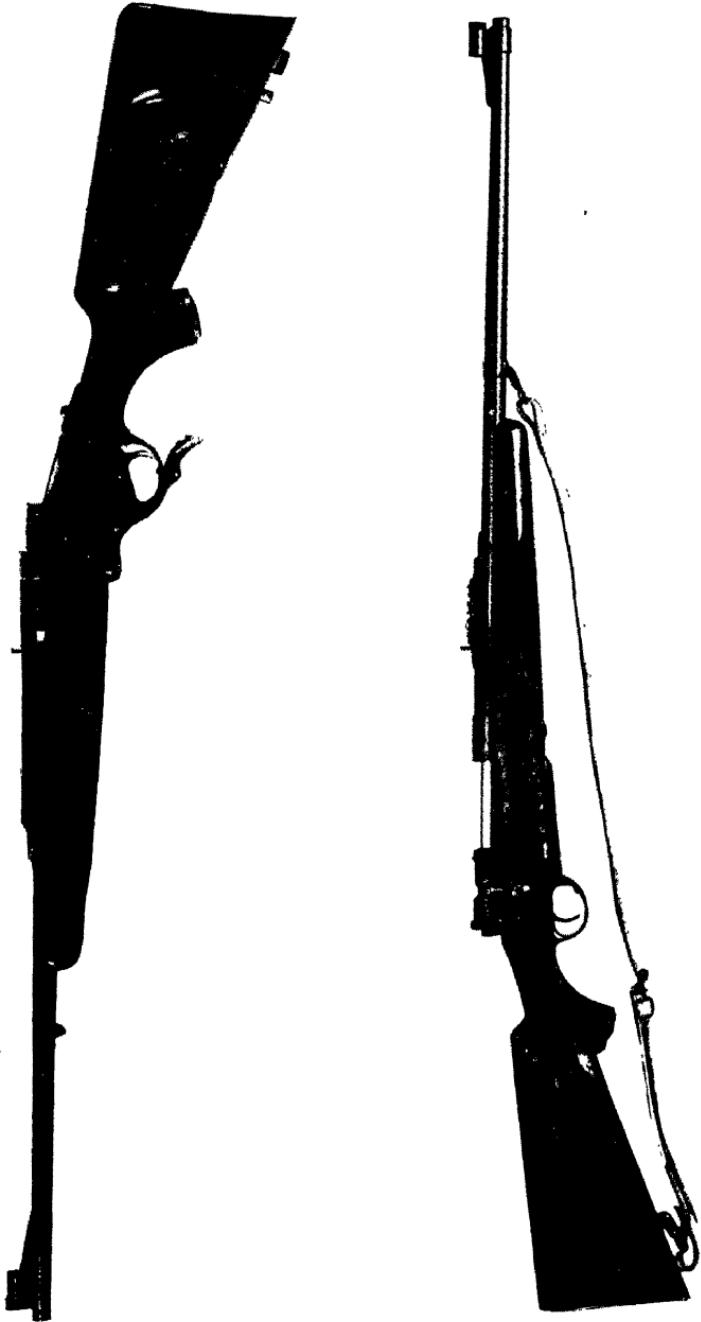
Actually the muzzle velocity has been raised from an average of about 1050 feet per second to approximately

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1300 feet and the muzzle energy from 112 pounds to 158 pounds.

As I intimated in the foregoing part of this chapter, the average man does not take the .22 very seriously. This must be corrected. The ammunition is to be respected. Obviously, as it has greater range and more killing power than heretofore, it is relatively more dangerous to use in a settled community. It no longer should be placed in the hands of the small boy and regarded as but little more powerful than an air rifle. Otherwise, many people who disregard the power of the load are doomed to a rude awakening. And the shooters of the country will discover that they must face still more No Shooting signs put up by irate farmers who resent having their live stock put in jeopardy.

In conclusion I wish to say that despite the increased power of the load, the .22 Long Rifle is still too light for woodchucks, which we will discuss further in the next chapter.



THE FARQUARSON FALLING BREECH 7 m/m RIFLE

Made for the Author by Griffin and Howe—A Splendid Vermin Rifle

THE .375 MAGNUM



CHAPTER FOUR

The Intermediate Vermin Rifle

AS STATED in the previous chapter, the .22 Long Rifle even when the new high speed ammunition is used, is woefully lacking in killing power. Even though recognized forms of game are protected during the long closed season from the late winter until the following fall, there is considerable shooting for the enthusiastic rifleman who likes to prowl through the woods and fields, rifle in hand. In fact, I often think the spring and summer offer more fun with a rifle than any other time—hunting woodchucks and crows chiefly but also dropping an occasional fox or coon, and now and then a weasel or red squirrel or some other form of vermin which is not tabooed, including that worst of all offenders, the prowling house cat.

The man who goes in for this sort of thing helps immeasurably the propagation of our game supply. The Bureau of Biological Survey informs us that there is more game killed throughout the country by marauding house cats than by all the sportsmen put together. Only a few years ago while hunting woodchucks about forty miles from New York, I ran into a band of semi-wild dogs

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that had been carrying on depredations in Putnam County for over a year. At the time they passed me they had a full grown doe before them and I was fortunate enough to drop two in their tracks before they were out of range. These savage animals would certainly have pulled the doe down and destroyed her if they had not been driven off.

Crows, red squirrels and hawks are forever robbing other birds' nests in the spring. Woodchucks, I maintain, do little harm. The damage they cause by eating crops or digging holes in farmers' pastures is grossly exaggerated. While I enjoy stalking them with the rifle, I think it is shameful that they should be destroyed by poison, trapping or by gassing them from their burrows, as the Agricultural Department of our Government has recommended.

The fact of the matter is that of all such vermin, the woodchuck affords most excellent practice for the sportsman. A few days' woodchuck shooting each spring is more beneficial than all the target shooting in the world in adding keenness to the perception and coolness to the trigger finger of the hunter who goes out in quest of more lordly game when the open season arrives. Hunting woodchucks is not only the best form of practice for the stalker of mountain sheep and goats and other western game, but it also offers the very best sniping practice for the military rifleman.

THE INTERMEDIATE VERMIN RIFLE

Colonel Sheldon, Chief United States Game Warden, when Chief Game Warden of the State of Vermont, used to invite the writer up to Montpelier each spring to shoot with him. We devoted our time entirely to woodchucks and crows and played a sort of game with the animals. If we missed a shot it was one point up for the chucks, and killing one gave us a point. Taking shots as they came at any range from 100 to 200 or 300 yards, it was very seldom that we came out much ahead of the chucks at the end of the day. I think those spring seasons spent in Vermont are among my happiest sporting recollections.

Woodchucks are extremely tough, in fact this is true of all forms of ground vermin. While hawks and crows are easily killed within the range of the .22, it is often impossible to get so close to them. There has been in consequence for many years, a crying need for an inexpensive cartridge superior to the rim fire loads in killing power, more accurate than the .25-20 and .32-20, but less expensive than the .25-35 class.

The .22 Winchester rimfire with its 87 pounds of remaining energy at 100 yards and the .25 Stevens with 145 pounds remaining energy at the same range cannot be considered, chiefly because they do not have the requisite degree of accuracy to accompany their power. From the .25 Stevens, we must pass to the .25-20 or .32-20 load with one exception to which we will again refer.

The .25-20 shooting an 86 grain bullet has a standard

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velocity of 1380 feet per second and an energy of 362 pounds. The .32-20 shoots a 100 grain bullet at 1325 feet per second velocity with an energy of 390 pounds. These powers are satisfactory, but their accuracy is limited to 150 yards. Beyond that, their height of trajectory places them beyond the pale.

With the improvement in powders a few years ago, the high speed type of cartridge was introduced. The weight of the bullet of the .25-20 was decreased to sixty grains with a muzzle velocity of 2200 feet per second and an energy of 645 pounds while the muzzle velocity of the .32-20, with a bullet reduced to 80 grains, was 2000 feet per second with 710 pounds energy. This gave these cartridges the required power but unfortunately their range for accuracy was not increased in proportion. They still remained 200 yard loads with a midrange trajectory at 200 yards of approximately eight inches. This is entirely too high. The factor of personal error in judging exactly the range of an animal the size of a house cat or slightly smaller (such as a woodchuck) in a rolling terrain was too great to permit a fair percentage of killing hits.

In consequence, the vermin shooters resorted to the use of higher speed cartridges, quite capable of killing our largest game. Many used the .30-06 Springfield or the 7 m/m Spanish load; others preferred the .32 Remington Rimless or the .25-35 Winchester. The former are the

THE INTERMEDIATE VERMIN RIFLE

two most popular loads for the biggest game found on this continent and the latter two are quite large enough for deer and black bear. It was not that we needed this excessive killing power for vermin but we insisted on having the accuracy and flatness of trajectory which none of the small commercial loads produced.

When the writer was a boy there were many cartridges in the vermin class which were highly thought of, including the forgotten .22 Extra Long Center Fire, the .25-21, .25-25 Stevens, the .28 Stevens and the .32 Ideal, all of which had their enthusiastic supporters and were well thought of at the time, but were incapable of being stepped up in velocity to meet our modern demands. Either in the process, accuracy was sacrificed, or the cases were of such shape that they would not tolerate the increased pressure.

Eventually, Mr. Neidner, the eminent gunsmith, introduced a miniature high power cartridge which he called the .22 Magnum. This was developed by necking down the shell of the .32-20 cartridge to .22 calibre. The cartridge was never produced commercially and as a result, the shooter was dependent upon hand-loading.

Following in Neidner's footsteps, Major Watkins of the United States Army conceived the idea of converting the .22 Winchester Center Fire in the same manner. The cartridge met with instant success. The Winchester company jumped into the breach, produced it commercially

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and renamed it the .22 Hornet and in no time sportsmen throughout the country set up a hue and cry for a weapon to handle it. But as yet, there was no commercial rifle available. Enthusiastic riflemen haunted second-hand gun stores endeavoring to pick up old Winchester and Ballard single shot actions which could be re-barrelled as Hornets. Eventually R. F. Sedgeley re-designed the Sporting Springfield to take it and Winchester adapted their Model 54 to it. The Savage Company answered the challenge with their Model 23D, in one major respect the best of the three, inasmuch as its short receiver was originally created for a cartridge of these dimensions. As these rifles weigh when loaded and complete with sling strap in the neighborhood of eight pounds, the question may arise as to the cartridge being, so to speak, over-gunned. But as a matter of fact, the extreme accuracy of this load can only be secured when used in a rifle of sufficient weight. The load as originally produced by the Winchester Company gave the following ballistics:

Muzzle Velocity 2350 ft.	Remaining Velocity 100 yds. 1920 ft.	Midrange Trajectory 100 yds. 1"
Muzzle Energy 550 lbs.	Remaining Energy 100 yds. 370 lbs.	200 yds. 3½" 300 yds. 10"

The cartridge has subsequently been improved. Quoting from the latest Remington figures, with a 45 grain bullet it develops 2600 feet velocity and 675 pounds muzzle energy. While the original cartridge was re-

THE INTERMEDIATE VERMIN RIFLE

markably accurate, I personally believe that its killing power was greatly overrated and I believe with the increased velocity which it now attains that the previous claims made for it will be fulfilled.

It is quite obvious that the average .22 rifle cannot be made over to take this load when it is realized that the cartridge develops a pressure of 35,000 pounds per square inch, in attaining 2600 feet muzzle velocity from its 45 grain bullet. The trajectory is so flat over the first 150 yards that practically no allowance is necessary shooting at a woodchuck, cat or other mark of that size, whereas with the .25-20 cartridge if sighted in for 100 yards one would have to hold over or under as much as three or four inches to hit within 150 yards range.

Of course, the average unskilled man who potters around with a rifle is incapable of deriving the fullest benefit from such an expert weapon as this. What he requires is a fool-proof rifle, demanding little care and adjustment, with which he can knock over with fair consistency half of his game within 150 yards. The average man never gains sufficient skill as a rifleman to expect more of himself or his weapon, and for that reason I am inclined to recommend the little Savage Model 23B bolt action or the Winchester Model No. 53 lever action for the .25-20, in either case equipped with a Stevens No. 438 telescope sight.

This telescope, which incidentally is the cheapest on

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the market, is simple and strong in construction, has ample facilities for elevation and windage, magnifies three times, which is ideal, and has a field of vision of about thirty feet at one hundred yards. Telescopes will be described fully in their proper place. It is sufficient to say here that no vermin rifle can be considered complete without a telescope. Often the woodchuck in the middle of the day will lie up on a stone wall partly concealed by intervening poison ivy and other brush, or when feeding in the early morning or evening will be concealed by the height of the grass. The same is true of house cats or crows, so that one needs a sight which will give the greatest clarity of vision and definition.

Within the last few months I have been asked to recommend vermin rifles for several young friends of mine and, in each instance, I have picked out the Winchester Model No. 53 because it can be bought with stainless steel barrel for little additional expense, a great advantage to the novice. He can then forget to clean his rifle and not have to awaken to the fact that in a few months' time it has been ruined beyond all repair.

In each instance I have recommended the little No. 438 telescope, advising the purchaser to have the rifle sighted in at the factory so the scope would hit pointblank at 100 yards. Then he should make a few practice groups at 50 and 150 yards to find out how much he should hold

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under at shorter ranges or over for longer ranges. In every case my friend has been delighted with his purchase.

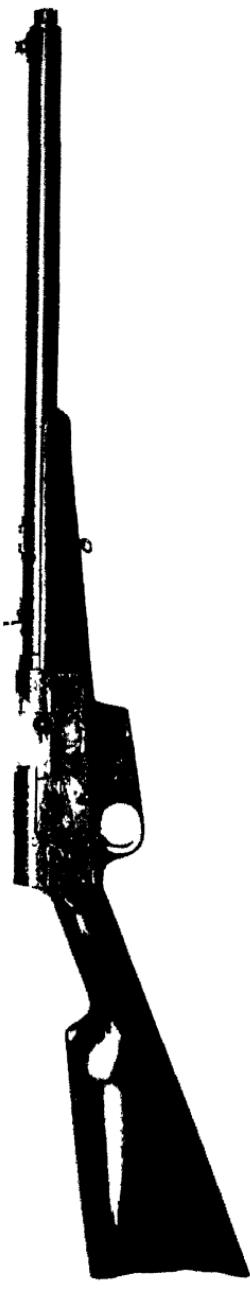
For the last few years I myself have done all my vermin shooting with a sporting Springfield. I would not advise the average unskilled rifleman to do this because of his probable unfamiliarity with the extreme range of such a powerful rifle. It has, however, tremendous advantage to the big game hunter inasmuch as he is becoming more familiar every day with the sight adjustment, range, recoil and feel of the rifle which he will later take into the game fields. It is my emphatic opinion that nothing in all my years of practice ever so fitted me for the mountain sheep hunting which I have done in the northwest and deer stalking in Scotland, two of the most difficult forms of shooting, as my persistent woodchuck hunting in the summers in the hills of New York and New England.

So, if a man possesses such a rifle and will use some discretion, never firing at a mark unless he has a solid background behind it, he can, with the use of the special cartridge for vermin shooting having a 110 grain bullet driven at a velocity of 3500 feet per second, consistently kill woodchucks from the prone position with a sling hold and telescope at 300 yards. I say consistently—a skilled rifleman should be able to make three out of five hits at that range. He can do it with perfect safety, confident that the little light bullet at such extremely high velocity will strike with explosive effect, going to pieces

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without any fear of ricochetting and killing some farmer's cattle in the near distance.

If a man has a .30-06 sporting rifle or a 7 m/m or a .270 Winchester or even if he has one of the .30-30 classes of bolt or lever action type that he wishes to use for his vermin shooting, with a sling strap to promote steady holding, and refined sights which afford first-class definition, he can profitably use it for the purpose, but the average sporting rifle purchased by the deer hunter without a sling swivel or adjusted trigger pull, with a big coarse ivory bead in front and a still coarser open notch rear sight, is a handicap which no amount of skill can enable him to overcome in shooting at such small marks.



DE LUXE REMINGTON AUTO-LOADING RIFLE

DE LUXE SPRINGFIELD RIFLE



CHAPTER FIVE

The Deer Rifle

THREE are many varieties of rifles to consider for big game, each of which will be discussed in its proper place. From the standpoint of power, however, they can be separated into two classes. The first includes those suitable for big game, such as the grizzly, moose, elk, caribou, sheep and goats encountered in the West and Northwest; and the second, those intended for medium size game, often improperly called big game by the masses. This latter class includes black tail, white tail and mule deer, black bear, cougar, coyotes and timber wolves.

As the vast majority of our sportsmen never hunt anything larger than the game in this second class, we will take it up first. There are many different rifles and cartridges which are suitable, so that if the beginner places himself in the hands of a reliable dealer, he can hardly go wrong.

The craze at present is all for the bolt action rifle and in a measure justifiably so, yet I question its desirability for eastern shooting in the hands of the average untrained man. In every instance, with the exception of the Mann-

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licher-Schoenauer carbine, and the imported short action Mausers, the bolt action rifles weigh $7\frac{1}{2}$ pounds or over. Such weight is unnecessary for the safe or comfortable shooting of the medium power cartridges most desirable for game averaging 150 to 250 pounds. This includes the animals in this class, with the exception of the black bear, which sometimes in old age attains much greater weights. Nevertheless, the black bear is neither dangerous nor does it have to be taken at long range, nor is it any more difficult to stop than the deer, which has enormous vitality. Therefore, we may safely assume that a cartridge which is big enough for the largest deer is suitable for the biggest black bear.

Among the cartridges which I would recommend for the purpose are the .250-3000 Savage, the .30-30, the .32 Special, the .303 Savage, the .33 Winchester and the .25, .30, .32 and .35 Remington rimless loads. I am treating my readers with perfect frankness when I say that I would as soon have one as the other for the purposes in view. They all develop approximately from 2000 to 2300 feet velocity with from 1500 to 1800 pounds muzzle energy and a consequent remaining energy at 100 yards which is more important, of from 1100 to 1400 pounds. Whether one adopts one of them in a bolt action, slide action, lever action or automatic type of rifle is largely a matter of personal choice, but the following point might well be taken into consideration.

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Among the bolt action rifles there are three to choose from—the Winchester Model 54, the Remington Model 30 and the Savage Model 45. The first two will, even in the carbine length, weigh $7\frac{1}{4}$ pounds unloaded, which is on the heavy side. While I hold no brief for speed of fire, it usually being the first shot which lands, the fact remains that the average deer hunter has very little if any practice before he goes into the woods, and consequently is incapable of handling a bolt action rifle to the best advantage. On the other hand, his game almost invariably inhabits thick cover, hence his shots usually must be taken at short range and on the run, where it is to his advantage to be able to get in a quick second shot. There are many advantages in the bolt action type of weapon which will be considered in discussing the rifle for western shooting, but they are for the most part not all-important to the deer hunter.

There is only one slide action or trombone action rifle of high power—the Remington Model 14. It is undeniably fast and weighs but $6\frac{3}{4}$ pounds, but it also has shortcomings. The action does not give as much leverage for ejecting easily a swollen or otherwise jammed shell, as is afforded by the lever action rifles and the powerful camming motion of the bolt actions.

The rifle, unfortunately, is not well stocked. To my mind it does not come up well to the shoulder. While intended for fast shooting, its general proportions and

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balance do not lend themselves to this purpose and unfortunately, the sliding forearm is loose and rattles in a way that would be most annoying to the still hunter.

The automatics are, of course, the fastest of all—an extremely doubtful advantage to anyone but the cool, not easily rattled hunter. After twenty years of observation I am inclined to believe that speed of fire in itself is no advantage in killing game.

Naturalists all agree that the white tail deer is a highly nervous animal and I endorse this opinion from personal experience, but they are not so nervous that they can be frightened to death. It is impractical to try to kill them through the medium of a box barrage when your rifle holds five cartridges to one loading, as our sporting automatics do. No matter what one is hunting, the important shot is the one that hits. This, as I have said before, is usually the first shot fired.

The automatic has many shortcomings which, in the minds of experienced sportsmen, offset the advantage of its speed of fire and it is for this reason that the hand-operated rifles, particularly the bolt and lever action types, still remain the most popular. Occasionally, one does run into an automatic in the Adirondacks, northern New England or in the thick, short cover of northern Wisconsin, Minnesota and Michigan, but so seldom that its presence immediately arrests attention. Automatics should obviously appeal to the average uninitiated sports-

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man who is buying his first rifle, so their scarcity can be attributed, I would presume, to the beginner's purchasing his rifle with the advice of someone of experience.

Automatics without any exception are excessively heavy and clumsy for the power which they generate, due to the heavy breech construction and the powerful recoil springs required for their operation. To illustrate, the .32, .35 and .351 Winchester automatics weigh 8 pounds with twenty-inch barrels. The .401 Winchester, $8\frac{1}{2}$ pounds with a twenty-inch barrel. The Remington .25, .30, .32 and .35 rimless automatics, $7\frac{3}{4}$ pounds with 22-inch barrels. A comparison of the ballistics of the cartridges mentioned above with those of the more up-to-date high-speed loads used in our modern bolt action rifles, immediately discloses the amount of extra weight the hunter must carry in payment for the additional speed of fire.

I am frequently asked why automatics are not brought out for more powerful cartridges such as the .270 and .30-06. We must remember that these cartridges develop a very high pressure averaging around 52,000 pounds to the square inch and that to handle such loads our present automatic models would have to be so ponderous that they would be impractical for sporting use. Also, occasionally, when the brass used is soft or poorly annealed, we meet with swollen cases. Automatics have to be as free as possible from such obvious causes of jamming. They are, in consequence, made with a much wider toler-

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ance in chamber boring than would be necessary in a hand-operated weapon to insure them against jamming when an oversize shell sticks. Even a normal shell may jam because of some foreign matter, such as burned powder grains or grit in the chamber.

This necessity for greater chamber tolerance in the auto-loading weapon has its effect on accuracy. The tighter the chamber, the more accurate the rifle and as a result, automatics seldom show the same gilt edge accuracy that one would expect from a bolt action type of weapon and this immediately eliminates them from consideration for long range shooting.

I must confess that, for the purpose for which most automatics are required, extreme accuracy is of no importance. It does not require a very accurate rifle to knock down a deer at fifty or seventy-five yards and except in parts of the West, it is rarely that we can see one at a greater distance, but accuracy always has its appeal to the purchaser. He is not inclined to buy a rifle, which he knows is less efficient, in case he secures that always dreamed of long shot.

Admitting the occasional advantage of speed of fire, we have opposed to it increased bulk, increased weight, decreased accuracy and a less efficient cartridge, which I think accounts for the unpopularity of the automatic. Contrary to general opinion, they shoot just as strongly and function with as much reliability. The prejudice



SAVAGE MODEL 99 RIFLE
Caliber 250-3000, with Belding and Mull Sporting Telescope
WINCHESTER 64 STANDARD RIFLE

An Improved Version of an Old Favorite for Deer

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against them in this respect is unjustified. Misinformed people will tell you that they jam frequently, get out of order and freeze up. Although I have mentioned the possibility of this as the reason for one of its shortcomings, chamber tolerance, I must admit that in my experience they have always been entirely reliable. I seldom have heard of a man losing a deer or other game due to malfunction of an automatic but I can cite many instances where a hand-operated weapon has fallen down. My chief objection to the automatic is its weight.

On the other hand, the Winchester Model 55, one of the best of the lever action rifles, weighs but $6\frac{3}{4}$ pounds and the Savage Model 99 featherweight, $6\frac{1}{2}$ pounds. They are simple in construction, have ample leverage to eject positively slightly oversized shell cases and are the fastest of the hand-operated rifles for the average man to use. On the whole, my vote for the deer hunter is the lever action rifle. It also has its disadvantages. For one thing, in take-down models it has greatly decreased accuracy, and in the solid-frame variety it cannot be readily cleaned from the breech, but with our modern ammunition cleaning is not as important a problem as heretofore.

The lever rifles in most instances are poorly stocked. This can be remedied by commissioning an expert gunsmith to make a properly built stock with a high thick comb and correct length, pitch, and drop at heel to suit the proportions of the shooter. If he has long arms, the

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factory stock is sure to be too short, but this can be lengthened. It is easily done by the addition of a soft-rubber recoil pad of suitable thickness. In this respect the Savage Model 99 R. S. is in a class by itself—there is no other lever action rifle produced today to compare with it except those restocked to order and the Winchester Model 64, which is really the old Model 94, equipped with a half magazine and a modern sporting stock and fore-arm. These improved lever actions are of necessity heavier than the former models but the difference in weight is worth the sacrifice to the keen marksman.

Nor are the crude factory sights with which these rifles are equipped to be tolerated, but this will be taken up in the proper chapter.

I would suggest that a lever action rifle is the most desirable for the average man who does not want to carry unnecessary weight, who is not sufficiently skilful to derive the benefit of the increased accuracy of a more precise arm, particularly under field conditions, who probably would not kill as much game with a more powerful rifle because the increased muzzle blast and recoil would cause him to flinch, and who does not require a load of over .30 calibre developing around 1400 pounds remaining energy for the game in question. It is also most suitable for the man who would not practice sufficiently to attain the necessary speed to use properly the bolt

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action and lastly, who desires a rifle which is inexpensive in initial cost and ammunition and for which the cartridge supply is reliable in the local sporting goods stores.

The sportsman of average experience will find the multiplicity of cartridges upon the market at the present time confusing when he endeavors to select one for his purpose. I would caution against the use of the super high speed loads with ultra-light bullets. Let us take for example the ever-popular .30-30. For this we can secure a cartridge loaded with a 110 grain bullet at 2550 feet velocity with an extremely flat trajectory of 3.4 inches midway at two hundred yards range. This is a very accurate load up to 500 yards. It is splendid for woodchucks and coyotes, but it should never be used, as I will explain in the next chapter, for larger game such as our white tailed deer.

At the same time, the old cartridge has been superseded by an "Express" type which has a ten percent higher velocity than its predecessor. For instance, the standard .30-30 a few years ago shot a 170 grain bullet at 2000 feet velocity. This has now been stepped up with a 165 grain bullet to 2250 feet velocity. In a like manner, the .32 Special, the .30 and .32 Remington rimless and the .35 Remington rimless have been proportionately speeded up. These are ideal loads but, of course, should only be used with expanding bullets. There is no purpose for which these guns are used for which the full metal patch bullet

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is desirable. They fail to expand properly on impact, passing completely through the animal struck without a great deal of shocking power and lead to the needless crippling of much game.

Occasionally one sees a man with a combination gun—either an over and under with one rifle and one shotgun barrel or, more usually, the German variety with two shotgun barrels and a rifle barrel underneath. To many sportsmen this seems the ideal gun, one with which he can fare forth to secure anything which fortune may put in his way, from a rabbit to a black bear. As a matter of fact, experience teaches that fortune very seldom puts anything in the way of a man that goes out for everything. A jack of all trades is usually a master of none and this is true with the combination weapon.

If one goes out for grouse and quail and hunts them as he should, he will go too fast and with too much noise to be likely to see a turkey or a deer and if he goes out for quail with turkey and deer on his mind and pussy-foots around all day, he will not kill many quail. In the same way, the deer hunter that takes a pot shot with a shotgun barrel at a grouse, squirrel or rabbit, which he may see in the course of his wandering, is not likely to meet many deer. After all it is best to remember that only a rifle should be used for fur and only a shotgun for feathers.

There is just one possible exception that I would make



MULE DEER FROM ALBERTA

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in favor of the all-round gun and that is, the conditions which the turkey shooter in the South must meet. Frequently, he will build a blind and call a turkey up to within 75 yards or just out of range of his shotgun, where he can very easily kill it with a well-placed rifle bullet. On the other hand, the turkey shooter who goes out armed with a rifle as some do, is sure to have very sporty shooting, if any, but the type of arm is a severe handicap when he flushes a wary old gobbler that goes flying away over the hard woods. So for turkey shooting, I would say that the combination gun has good points.

In conclusion I would like to say a few words against the unsportsmanlike practice of using buckshot for deer. I realize that there are a few places throughout the country where, due to the density of the population, it is not lawful to use a rifle but I can only say that where these conditions exist, deer hunting should not be allowed. I have tested many shotguns with buckshot and I have never yet found one that could be depended upon to kill deer consistently at a range of over fifty yards. Most of them will not do so at over forty-five yards. One need only take any twelve bore gun, cylinder or full-choke, and pattern it for this range to determine the wide dispersion of the few pellets in this load. He will then realize that he stands a ten to one chance of crippling many a poor beast which will crawl away to die, miles distant, after days of lingering agony, from a shot through the lungs.



CHAPTER SIX

The Big Game Rifle

HAVING recommended a medium power rifle for deer in the preceding chapter, I desire to go on record as being unalterably opposed to the use of such loads on larger and heavier species of game. Every year moose, elk and grizzly are killed with .30-30, .32 Special and .303 Savage bullets but untold hundreds of them are hit to escape and succumb later to wounds caused by these ineffective cartridges. Of course I mean ineffective on such heavy game. There is an excuse for their use by the woodsmen and trappers of the far north, as these men generally must depend upon the local supply of ammunition and the one cartridge which all the trading posts handle is the .30-30. Furthermore, the rifle is only one of the many things which they are obliged to carry, hence it must be light in weight, and as such men do not have time to give their piece very good care, it must be inexpensive and easily replaced. But the sportsman has none of these things to consider. In the name of good sportsmanship, his desire should always be to kill cleanly and quickly, with the least possible suffering to his quarry.

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Many years ago in Nova Scotia I brought down a big moose and in dressing it we noticed an old scar on the rump near the backbone. Opening it with a knife we found a thin line of gristle parallel to the spinal vertebræ and about an inch or two to the left, running from the point of entrance about eighteen inches up the back toward the saddle. At the end of this wound the knife struck a hard substance which proved to be an old .30-30 bullet embedded in the muscle. Apparently it had been there for years. Had it been from a more powerful cartridge, it would undoubtedly have dropped the beast in its tracks, yet it had escaped to live until we had encountered each other.

For big game the modern sportsman should be satisfied only with a cartridge developing from 2500 to 3000 feet muzzle velocity with a remaining energy at 100 yards of from 2000 to 2500 pounds. Many of the cartridges listed as suitable for deer hunting approach these figures when used with the very light bullets which have recently been designed for them, but paper ballistics and practical demonstrations are often at great variance.

A bullet of .30 calibre, weighing 110 grains, may be driven in the .30-30 calibre rifle to a speed of 2550 feet per second, whereas the 180 grain bullet of the same calibre in the .30-06 Springfield will develop but 2700 feet velocity. The difference, however, is that while the former has 1590 pounds energy on paper, the latter has

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2910 pounds, nor does even this tell the entire story. These light bullets of extreme velocity go to pieces quickly upon impact, due to their high energy.

It might be well to explain here the action of the mushroom bullet on impact. Modern bullets of the best type are made with heavy jackets at the base or rear end which thin out toward the point until just at the tip the soft lead core is exposed. When the tips are not open or exposed, the tendency of the bullet is to drive through bone and muscle without expanding and with little shock, but if the velocity is high enough the energy upsets the soft exposed point of the bullet, the lead flows back and once it is started, continues to split toward the base until the energy is completely expended and the bullet's progress has been stopped. Properly made mushroom bullets usually expand in this process to twice or $2\frac{1}{2}$ times their normal diameter at the front end and, of course, have enormously greater killing power resulting from the additional shock and the increased size of the wounds.

Obviously, if the bullet is very soft and the energy very high, it will break back until it reaches the base and then go to pieces. In extreme cases, this effect is almost explosive. Such a bullet will create a terrific superficial wound but it is not apt to penetrate to the vitals of a heavy beast because its energy is entirely expended near the surface. In consequence, it is safe to say that, to be

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satisfactory, the length of big game bullets should average $4\frac{1}{2}$ to five times their diameter.

For heavy game the most desirable cartridges are the .270 Winchester, the .30-06, the .30-40, the .300 Savage, the .276 and the .375. Of these the .30-06 is easily the best for many reasons. Probably more attention has been devoted to the improvement of this load than to any other the world has ever known. As a result, it is the most efficient cartridge we have today, particularly in accuracy and killing power. It is so widely distributed that one can get it in any part of the North American Continent. It has even received serious recognition in Africa—the final test of a load for big game—being considered one of the most suitable loads for long shots on the open veldt.

There are a host of different loads for it of a special purpose type, from the 220 grain round nose short exposed point bullet at 2450 feet velocity and almost 3000 pounds energy for grizzly and moose to the 110 grain bullet at 3000 feet velocity for woodchucks. In my opinion, the best all-round load for the Springfield and, incidentally, for the North American Continent, is the 180 grain open point boat tail bullet at 2700 feet velocity and 2910 pounds energy. I have used it with complete satisfaction on every form of American big game and most European game.

Personally, I do not favor the .270 Winchester. I have

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never found it quite as accurate as the .30-06. The recoil and muzzle blast is objectionably high and I do not consider a 130 grain bullet, or even the new 150 grain bullet, heavy enough to be reliable under all conditions, nor is the load well distributed.

The .30-40 cartridge is still justifiably one of the most desirable. It is a load for which those sportsmen who prefer a lever action gun for big game can still get one in the model 1895 Winchester. Though I used the model No. 95 for many years, at a time before bolt action rifles had become popular here, it was such a clumsy, heavy arm that I would personally be inclined to prefer the model No. 99 Savage for the .300 cartridge. The .300 Savage cartridge was designed in an effort to produce a cartridge for their lever action rifles and their original short bolt action gun, the model 1920, which would equal the .06 in ballistic qualities. Amply powerful for any American game in the hands of a skilled marksman, its only drawback is that it develops rather high pressure for a lever action and has not the advantage of the multiplicity of loads with various weights of bullets available in the Springfield, nor is it so generously distributed.

Next to the Springfield the 7 m/m (.276) is probably the best. In it we have a choice of either a 175 grain bullet at 2300 feet velocity or a 139 grain bullet at 3000 feet velocity—the former developing 2110 pounds energy



REMINGTON MODEL 30 SPECIAL RIFLE

RESTOCKED MODEL 30 REMINGTON RIFLE

With Zeiss Zieldklein Scope on Griffin and Howe Mount

MAUSER SPORTING RIFLE

With Hensoldt Scope on Griffin and Howe Mount

WINCHESTER MODEL 54 (CALIBER .30-06) SPECIAL RIFLE

THE BIG GAME RIFLE

and the latter 2778 pounds. With it the biggest game on the American Continent has been killed. Mrs. Curtis has used it on several expeditions with complete satisfaction. For the man who is sensitive to recoil or who wishes to reduce the weight of his weapon to an appreciable extent, it is a better load than the .06 Springfield, the weight of which should not be radically reduced.

In the .30-06 we have four models to choose from—the .03 Springfield restocked, the model 54 Winchester, the model 30 Remington and the model 45 Savage. The choice among them is largely a question of price and personal opinion as they are of equal accuracy and reliability. Of course, one would get a more refined gun in a restocked Springfield built to his order for \$150.00 than he would in a standard Winchester or Remington for \$50.00 but that is to be expected and, in buying them, I would suggest that one go to the expense of selecting a slightly better stocked rifle such as the NRA type model 54 Winchester or the Remington Model 30 Special, both of which have stocks superior to the standard factory models. These rifles all weigh within the neighborhood of $7\frac{3}{4}$ pounds.

I have seen Springfields that have been reduced to $7\frac{1}{4}$ pounds by the judicious use of a file in the hands of an expert gunsmith and by reducing the barrels in length and diameter, but I do not recommend this. Short barrels create a terrific muzzle blast, which is equivalent to recoil

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because the harder the blast, the more the piece seems to kick, and kick is objectionably increased when the recommended Springfield .06 sporting loads are used in a rifle of less than $7\frac{3}{4}$ pounds. The army worked out the length of barrel of the Springfield to twenty-four inches and nothing shorter is quite as good.

The reasons for the preference of the bolt action rifle over the lever action are many. They are all factors which become important when hunting in the far North and West but which as explained before are not important to the deer hunter in comparatively settled localities. The big game hunter of today has to go far afield in search of his quarry. It is not unusual for him to get back two or three hundred miles from a railroad—far from the base of supply, where he is absolutely dependent upon the serviceability of his rifle for food. To anyone with the slightest mechanical sense, the superior strength of the bolt action type is so apparent that it needs no description here.

Let it suffice to say that whereas it is not advisable to shoot a cartridge developing more than 44,000 pounds pressure in a lever action rifle, any modern bolt action weapon will safely stand around 60,000 and the majority of our big game cartridges will develop between 50,000 and 54,000. The rifle is so designed that it can be completely dismounted for care and inspection without the use of tools, which is impossible with the lever or auto-

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matic type. To be sure it is heavier, which is necessary to give a sufficient margin of resistance to the chamber pressure involved and the recoil set up, but it must be realized that these rifles are most frequently used in open spaces where long shots are more apt to be the rule than the exception.

Under these conditions one cannot shoot to advantage with a featherweight weapon such as he would find so handy when slipping through thick cover in our eastern forests, where all his shots would be at short range. Under woods conditions, one does not need a super-accurate rifle, but the western shooter more frequently will be obliged to take his game at from one to two or possibly three hundred yards. There are cases when he may come face to face with a grizzly or mountain sheep at 25 feet, which I have done more than once, but such occasions are comparatively rare.

The western hunter should resist any preference for a light rifle. He will do better work with one of moderately heavy weight. In my battery I have a Mannlicher 6.5 m/m but I have never used it for anything but woodchucks. It is a splendid little arm to wander around with in summer and one can shoot very steadily with it from the prone position or resting across the top of a stone wall but this does not show up the weakness of a light rifle, as conditions do in the West. Nevertheless, if a frail man or a woman is going to hunt sheep and goats, I would be

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inclined to recommend the 6.5 Mannlicher, because it is the most desirable cartridge that one could get in a really light short carbine.

Yet though it is more comfortable to carry and a highly efficient cartridge for the energy which it develops, the shooter of such an arm should admit to begin with that he is at a disadvantage as compared with a man using a full length Springfield with its superior ballistic qualities. Although one may believe that the featherweight will add to one's chances of success because it is less fatiguing on an arduous hike, the fact is that when the crucial moment arrives, the whole success of the trip may depend upon a weapon of good weight, with which one is prepared to show the maximum accuracy of which he is capable.

The bolt rifle is slower but speed of fire is seldom a talking point in western shooting. Weight absorbs recoil and barrel length reduces muzzle flash—two advantages which are invaluable in combating flinch, the arch enemy of the rifleman. Frequently when hunting in the high Rockies, after an exhausting climb for hours to get within range of my quarry, I have peeped over a ledge only to find that there was still some hundreds of yards intervening which there was no way of decreasing, or else I have crawled up a dizzy ledge to the very top of the world, only to have my quarry become suspicious when I was within a stone's throw of them, and dash off to disappear

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behind a protecting ledge and show up next at some hundred yards' range.

Out of breath, unsteadied by fatigue from the exhausting climb, rattled by the sudden change of conditions and compelled to shoot usually in the everlasting wind of the high altitudes—at such a time one would gladly have carried an extra pound of rifle over the rocks.

In 1926 I probably experienced as hard a hunt for my ram in the Alberta Rockies as most of my readers ever will. For nine days I hunted,—sometimes in the snow at an altitude of from 10,000 to 11,000 feet with a base camp at timberline (6,000 feet), averaging fifteen miles per day between 7:30 and dark,—before I secured my trophy. Yet I can say I never regretted the weight of that $7\frac{3}{4}$ -pound Springfield, the six cartridges in it and the one pound telescope attached to it. Tired I was, it is true, but the rifle added little to my fatigue and with the lighter arm, I would certainly have been doomed to failure at that critical moment on the very top of a high mountain when my quarry took fright and I secured my first shot running at 350 yards in the face of a gale of wind.

The value of the heavy rifle is best illustrated by the extreme popularity of the double barrel weapon among African and Asiatic sportsmen who are constantly encountering dangerous game. With few exceptions they have no use for light calibres and particularly for light

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rifles. They know from experience that at the crucial moment when a quick shot must be placed accurately it is only the heavy rifle that affords sufficient steadiness of aim.

Powerful as the loads are and severe as the recoil of them is, it would not be necessary to use the double barrel weapon if they did not consider weight and speed of fire of prime importance.

Incidentally, it might be well to say here that there is little if any use for a double barrel rifle in America. Occasionally one is seen but for our work they are too heavy. We do not travel with a black gun bearer to carry the gun until our game is in range. We have to do our own gun toting. Furthermore, they lack the accuracy requisite in a rifle for long range shooting. In fact, they are of advantage only when designed for cartridges larger than we require for our heaviest game. They have never been and never will be popular in America, and should be confined to jungle use.



CHAPTER SEVEN

Rifle Sights and Sighting

DESPITE the fact that our firearms manufacturers still equip their standard rifles with the conventional open rear and a rather large bead front, the peep sight is being better understood and appreciated each year. Twenty-five years ago, they were comparatively rare, except upon the rifles of the most skilled marksman.

They were by no means new even then. I have seen ancient Swiss crossbows equipped with them, for the optical principle of sighting was understood centuries ago. I cannot recall having seen a Kentucky Rifle with a peep but in the late muzzle loading period many of the percussion lock target rifles, made from 1840 until they were completely superseded in the seventies by the breech loading weapons, were equipped with various types of aperture sights. In many instances it became a tube reaching from the breech of the weapon to the muzzle. Quite obviously, such a sight while giving marvelous definition upon the target, because of its very narrow field of view, was only suited to precise shooting on a small mark.

When the aperture principle of sighting is under-

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stood, there can be no question about its superiority to the open type. It is an optical fact that the human eye automatically seeks the center of any circle. Look through a finger ring or down a funnel and your eye will instinctively seek its exact center.

The shooter should make no attempt to place the bead or blade of the front sight accurately in the center of the aperture. He should merely look through it as he would through a porthole and concentrate on resting the bull's-eye on the top of the front sight as was described in Chapter II (Elementary Rifle Practice). He should only be conscious of a dim black ring framing the front sight and his object. When he deliberately attempts to center them in the peep, which necessitates concentrating on the rear sight, he is defeating the very purpose for which the sight was devised. Until practice has provided the confidence to do this the peep is no better than the open variety.

The objection to the open sight is that one has to place the front sight accurately in the notch, being careful to show exactly the same amount of daylight on each side of it, to hold the top of the bead just flush with the flat top of the rear sight and then bring the two in line with the target. This is obviously impossible. It calls upon the eye to do some physical gymnastics which are very fatiguing. One cannot concentrate on three things at once, particularly when the optic is six inches or less from the rear

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sight, twenty-four to thirty inches from the front sight and anywhere from 25 to 300 yards from the target.

As the shooter brings the three in line his eye jumps first to the front sight, then to the rear and then to the target. When he is conscious of concentrating on the rear sight, the front sight and the target become fuzzy. When he concentrates on the forward object, the rear sight becomes fuzzy and as a result, he never gets a very close group. But by simply looking through a rear peep and concentrating on the two forward objects, a clear definition can be obtained.

I have yet to see the man who, with the most accurate rifle, under ideal conditions of light and wind, can make better than $3\frac{1}{2}$ to 4 inch groups consistently on the target at one hundred yards with an open rear sight, yet the same marksman with an equally accurate rifle using a peep, should be able to get his groups down to $2\frac{1}{2}$ inches at the same range. A variation of one inch to one and one-half inches in the size of the groups for a string of shots at one hundred yards is not much, but if he were shooting at four hundred yards at a sheep or a goat the variation of eight inches, which is what we would expect at that range, plus the dispersion of the rifle and wind drift, would very easily account for his missing.

It is really astounding that the open sight has held sway so long and I can only attribute it to ignorance and lack of practice. Once the prejudice of the average sportsman

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against a peep sight is overcome, he will never go back to the open variety. Whether it is game shooting or target shooting, or under what conditions the sight must be used, the peep sight is so infinitely superior that no other should be considered. It is quicker for shooting at running game in thick cover, part of which is not concealed by the bar of the rear sight. One can clearly see the animal at which he is shooting. He knows how much he is leading it, and can see both under and over it. Of course, if one is shooting in the dark shadows of deep woods, he cannot use a small aperture. He then must use a large one which permits sufficient light to filter through, but in the dense woods one has no occasion to shoot at long range. He can seldom see much over fifty or seventy-five yards. The large aperture of the peep with the cup disc removed is quite accurate enough for the range involved.

The only purpose for which I would use an open sight today is trick shooting at aerial targets such as small bottles thrown in the air. For this purpose I have found it to be quite satisfactory. Some people claim that the peep sight will fill up with snow or a drop of water may get in it on a rainy day, but the same thing will happen to an open sight, though perhaps not as quickly. It is just as easy to blow it out of one as the other.

A possible excuse for an open sight on the barrel of a rifle is for use as a check on the peep. If you should fall or drop an accurately sighted rifle with a peep on the

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bridge of the receiver or the tang strap, you may be uncertain as to whether the sight has been knocked out of alignment or not. By raising a hinged open sight, you can see whether the peep lines up with it and the front sight. If it does you know no harm has been done. If not, you can quickly make the necessary adjustment and if the sight was so badly mutilated by the fall that it is no longer useful, you would still have your open sights.

If one has a very precise long range sporting weapon, it is unwise to attach such a sight except by a band sweated around the barrel at the proper place. Its accuracy will be decreased if it is slotted to receive the wedged-on type of rear sight.

If one desires an emergency sight of this kind, as we invariably use a bead front sight, the open rear one should be of the "U" notch variety. Nothing could be worse than using a "V" notch with a bead front sight. The "V" notch can be used with a barleycorn front sight or the "U" notch with the bead, but they should never be mixed.

On lever action and slide action rifles of medium power, the folding peep attached to the tang strap is the most desirable, being very close to the eye, but it is impossible to use a sight so situated upon a bolt action rifle. The long bolt throw would generally be interfered with, and such rifles have no metal tang in the grip to which the peep can be properly attached. It can be fastened by

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wood screws but, of course, this is a rather weak connection. Also the majority of bolt action rifles, particularly those for big game shooting, are of the high velocity type transmitting severe recoil and it would be distinctly dangerous to have a rear sight too close to the eye.

For this purpose a receiver type of sight has been made, which is in every way stronger and less liable to be knocked out of alignment by a bump or fall, but whether one selects the folding tang sight or a receiver sight, it is always well to buy one with micrometer adjustment screws. With this sight one merely need target the rifle once at any known range, and make the necessary adjustment according to the position of the point of impact. The rifle can be accurately sighted with five shots when the micrometer is used, whereas it might take several afternoons and one hundred and fifty shots to sight it in with the cruder variety.

To illustrate my point, each click on the windage and elevation slides of the micrometer peep sight alters the point of impact one inch at one hundred yards. Let us say for argument sake the shooter was targeting his rifle at one hundred yards and holding on the bottom of the bull's-eye he found the center of impact was three inches to the left and six inches high. He would lower the elevation slide six clicks, shift the windage slide three clicks to the right and then lock the sight, and he would know definitely that if he held the same on the next

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group he would hit pointblank. On the other hand if he was shooting at one hundred yards and it was six inches low, he would raise six clicks. Some of the new micrometer sights are now regulated to half minutes of angle having eight instead of four clicks to a complete turn of the screw but the principle remains the same.

In the .22 rifle which is intended for a combination of target and small game shooting, I would recommend the use of a micrometer tang peep sight with a large detachable cup disc and Lyman 5B combination globe front sight. The cup disc with a small aperture and the globe front sight would be used for upland shooting. For shooting game the disc would be removed to afford the larger aperture and the globe would be folded down.

No discussion of sights would be complete today unless serious consideration was given to the telescope variety. I will only touch briefly upon those intended for target shooting and state that if one is desired for either a small bore or high power rifle for competitive shooting, there are only two to consider, the Fecker or the new Lyman "Targetspot" scope of 8 or 10 power magnification. Such a scope is the last word for target shooting.

Should one require a less expensive instrument for use upon a knock-about .22 rifle for small game and occasional target shooting of a less serious nature, there is the Lyman No. 438 model, which will serve the purpose admirably and costs about one-third of the price of the

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Fecker. Such a scope is really more desirable for small game hunting because of the wider field and greater luminosity, attainable with its three power magnification.

There is an entirely new field opened up to the small bore shooter who acquires his first scope. Until he has used one he has no appreciation of the possibilities of the small bore rifle and in a measure this is also true of the big game rifle. But the scope which is entirely satisfactory for target shooting and small game, is, because of its fragile mounts, narrow field and inadequate illumination, entirely unfitted for use by the big game hunter.

The target shooter requires a telescope capable of very minute adjustment. Such mounts, unless made ponderously heavy, would not be strong enough to stand the rough usage of the big game hunter. The target shooter requires high magnification, which can be gained only at the expense of other qualities more important to the hunter, as will be explained later.

The idea of a telescope sight is by no means new. I have been told that northern sharpshooters used them against the Confederate artillery at the siege of Richmond. Target scopes of the Fecker type made by Mogg, Malcolm and Stevens have been used by woodchuck shooters for the past fifty years. Although they were suitable for shooting at long range at a small and stationary target, it was recognized that they were impractical for more strenuous work.

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Hunting telescopes have been employed by European sportsmen for a considerable time and such good use was made of them by the Austrian and German snipers during the Great War that it awakened a new field of thought. Shortly after the war we saw a great many of them imported to this country, but while the scopes were optically excellent, they were usually too high in power, bulky and heavy and, in many instances, the mounts were thoroughly impractical. In fact, while we still depend upon Europe for our best scopes, it remained for American gunsmiths to devise satisfactory mounts, and also to design rifle stocks which would be more suitable to their use.

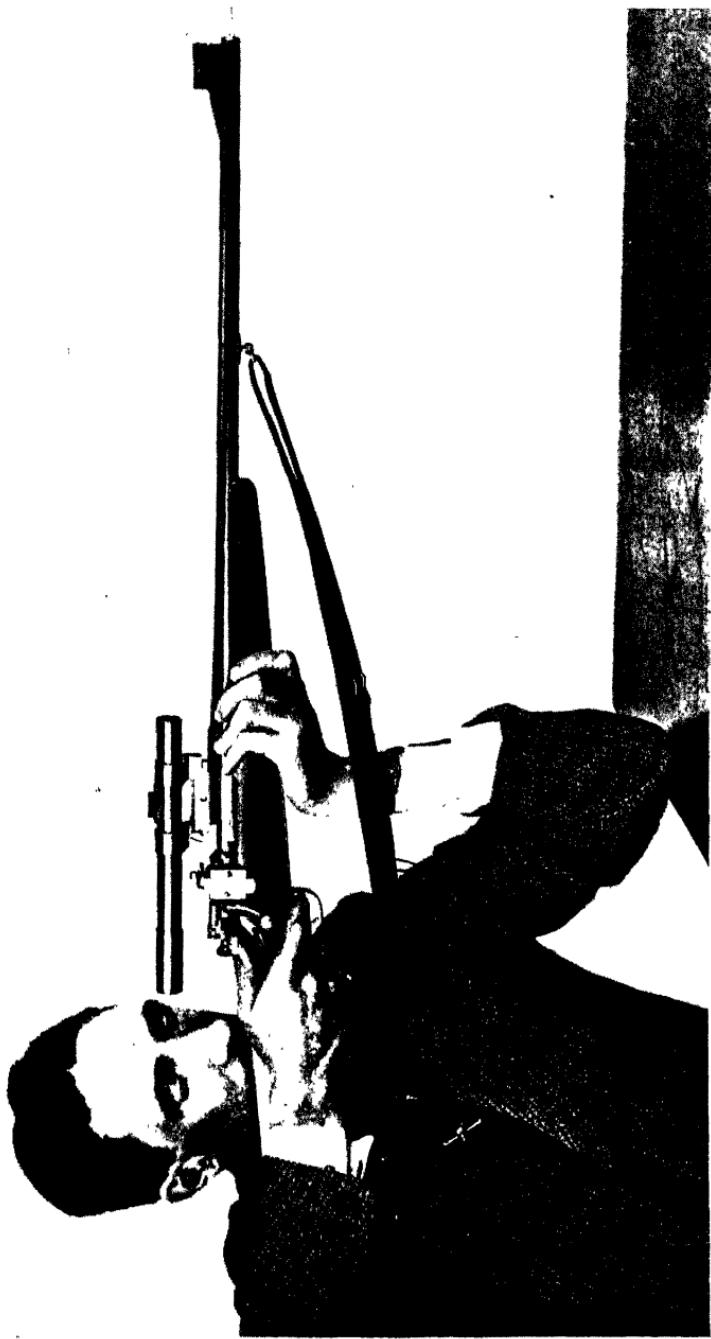
Between 1920 and 1925 I experimented with several foreign rifles fitted with scopes, all of which had some drawbacks, but of which the best was a Mannlicher-Schoenauer with a four-power Kales glass. One day, while in the Zeiss showroom, I saw their Zielklein model, supposed to be suitable only for a small bore rifle, and knew that it was exactly what I had wanted. I purchased one and immediately had it fitted to a Noske mount, then the best available, and attached to my favorite Springfield sporting rifle. I experimented with it for several months and then launched my sporting scope campaign. That autumn when I returned from a protracted expedition into northwestern Alberta, where I killed thirteen head of big game of seven different varieties under all sorts of

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conditions, I wrote a magazine article describing my experiences with it and the scope became popular overnight. The Zeiss Company told me that they had but six in stock when I purchased it and that they sold over three hundred before the end of the year. In consequence, I feel justified in considering myself the father of the modern sporting telescope sight in America.

Thousands of people have used them since, and many have written about them. Unfortunately not all of those authorities who took up the subject had the necessary field experience with them, but rather formed their conclusions after experiments on the target range. Consequently, while they were talking of hunting scopes, they were frequently thinking in terms of target scopes and a great deal of misinformation on the subject has thus been distributed.

Quite naturally, too, the speedy popularity of the telescope sight fostered the hasty production of many different models of scopes and mounts, the construction of which had not received sufficient thought. Most of them are unwieldy, overweight and complicated in design. With all due respect to the possibilities in a telescope sight, I would not tolerate one which was not in every respect the best. My only reason for promoting their use was to give our super accurate modern rifles the full advantage of their marvelous range and this cannot be done with an inferior or impractical instrument.



DE LUXE SPORTING SPRINGFIELD RIFLE

Fitted with Zeiss Zielklein Telescope on Griffin and Howe Mount
Built for the Author by R. G. Owen

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In selecting a sporting telescope sight, there are many important things to consider:

- It must be light and compact.
- It must not exceed four power.
- It must have a wide field.
- It must have high illuminosity.
- It must be waterproof and capable of resisting recoil.
- It must have a mount which is simple to attach and detach.
- It must have a mount which once adjusted will stay so indefinitely.
- It must have a mount which permits the use of the open sight when the scope is attached.

Let us analyze this. A bulky scope and mount makes what is in all probability a moderately heavy rifle exceedingly unwieldy. The Zeiss Zielklein weighs eleven ounces and with the mountings, a pound and a half. My Springfield weighs seven and a half and no rifle for the .30-06 cartridge should be lighter. Hence with the scope it weighs nine pounds, which is all the rifle one wants to carry.

The average man will assume that because the $2\frac{3}{4}$ power glass makes it easier to kill game, the four power will make it still easier. This is not the case, for as we increase the power, we proportionately increase the vibration. If the glass is four power the vibration is increased four times—just as the object shot at is increased

four times in size. As a result, when the tyro, unaware of this characteristic, picks up a scope sighted rifle, he is astounded to find that he cannot hold on the mark. He does not hold on with iron sights either, but the vibration is not so apparent. Under the most normal conditions one will be a bit unsteady, but if he is climbing at high altitude, after sheep and goats, the heart pounds like a trip hammer and the breath comes in short gasps. Every vibration would be exaggerated in the telescope and the strain on the eye from the wobbling glass would be terrific. In consequence, a glass of from $2\frac{1}{2}$ to three power is the best.

Just because the glass increases the size of a deer at one hundred yards four times, does not mean it makes it four times as easy to hit. The accuracy of the rifle is not increased. It will not make any smaller group with the telescope than it makes without it,—the trajectory is not flattened, the bullet is given no more energy. The telescope merely makes it easier to see just what part of the animal you are holding on at the time the trigger lets go, and this in itself is of tremendous advantage.

High magnification decreases the field and the illumination. It is clarity of vision rather than magnification, which permits us to see the object shot at distinctly and quickly. With a narrow field of some fifteen to eighteen feet at a hundred yards, such as the average target scope has, it is often difficult to find the object which one wants

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to shoot at, even when it is stationary. Imagine how increasingly difficult it would be to catch running game in the lens of such a glass from the offhand position. The sporting scope should have a field of from thirty to thirty-five feet at one hundred yards. Looking through such a glass when mounted upon a properly stocked rifle is like looking through a window. One catches his game in it as quickly as he would in the iron sights.

Now as to clarity and definition. Every big game hunter knows that the best time to hunt is in the early morning and the late evening when game comes out to feed, but when the light is poorest. That is just the time when one is most likely to spot a caribou, sheep or big bear above timber line and while one stalks it the light may get dimmer and dimmer. Or you may spot a deer a couple of hundred yards away in cover and cannot tell by the unaided eye whether it is a buck or a doe. If you are fortunate enough to have a pair of field-glasses with you, you can pick up the animal and readily ascertain whether it has horns or not and is a suitable head, but as soon as you relinquish the glass, the outline of the animal, surrounded by intervening brush, is softened by the shadows and highlights of the woods and becomes so dim you cannot tell where you are holding unless you use a telescope. So the target scope with the high magnification proves itself impractical for our purpose. To secure a wide field of view and sufficient illumination with the

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high magnification, it would be necessary to produce a glass with such large lenses that it would be too unwieldy for practical use.

It must be well made throughout. The force of recoil will quickly loosen up the lenses if they are not securely fastened. It must also be water-proof and as nearly dust-proof as possible. This suggests that it should be as simple as possible with a minimum of exterior adjustment screws. It must be equipped with a mount which is not only strong enough to withstand all normal abuse and the recoil of a heavy bullet, but also easy to attach and detach.

Some so-called sporting telescope sights which have been produced in this country within the last few years have as many as three or four screws to be fitted in their respective slots and screwed into place to hold the scope intact upon the base mount. The eastern hunter traveling in a canoe or on foot can, if he wishes, leave a scope on his rifle at all times, though it would be inadvisable, but the western hunter who travels almost entirely on horse-back, simply cannot carry a glass sight attached to his rifle in a saddle boot. The boot would be too unwieldy and the danger of getting the scope out of alignment would be increased. In consequence, he must have a scope that can be attached with the least possible effort and loss of time. This is of particular importance because the scope is really of more service in the long range open shooting of the West than in eastern hunting.

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The mount must be of such design that once accurately adjusted for windage in connection with the elevation drum on the scope, the instrument will remain properly sighted indefinitely irrespective of how many times it may have been attached and detached from the rifle and, of course, it must be a mount that will permit of the iron sights' being used when the scope is attached.

Three years ago I had an unexpected opportunity to kill a grizzly bear at a matter of fifteen feet. At such short range, the scope was completely out of focus. All I could see was a blurred mass in front of me. If my mounts had not been of a type that permitted me to use the iron sights by looking below the scope, I should have been at a loss to see where I was shooting.

A year previously in using the same instrument, I had a bad fall at high altitude and dropped my rifle. I examined it carefully and it did not seem to be out of alignment. The next day I had an opportunity to kill a sheep running at 250 yards. The first shot carried fifteen or eighteen feet to the left of my mark, and I immediately knew the scope was out of adjustment. I dropped my eye below it, used my iron sights and killed my quarry, which incidentally was a fine ram and the first one that I had seen in many days of steady hunting in the snow at high altitude. Had I been entirely dependent upon the scope I would most certainly have been disap-

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pointed in both instances. These are the sort of points which the inexperienced man is liable to overlook.

No automobile manufacturer considers it safe to put a new model in the hands of the public until it has had the most strenuous road tests. The reason for this is that despite the most advanced engineering skill employed in its design, there is no way of telling what might cause a breakdown until the car is put to a long practical test. This applies to the telescope just as much as to the automobile. In consequence, I maintain that the Zeiss Ziel-klein type with its light weight, wide field, simplicity and strength, together with the Griffin and Howe double locking mount, is entirely in a class by itself. I have never known it to get out of adjustment once it has been set for a given range.

In the last five years, my scope, which is sighted in for two hundred yards, has probably been attached and detached from my rifle not less than five hundred times, and it will still produce an inch and three-quarter group at one hundred yards.

There is one other important item for consideration, and that is the type of reticule. There are many reticules upon the market—the oldest and commonest being the single cross hair. The cross hair reticules afford splendid definition, but being made very light, they are extremely fragile and easily broken or disarranged by the heavy recoil of a powerful rifle. If they are heavy, they cover too

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much of the object shot at at long range. I had a cross hair reticule on a sporting rifle which at the bisecting point completely covered a woodchuck—an animal the size of a house cat—at 150 yards. Quite obviously such a reticule was impractical for big game at long range as it would cover all the shoulder area of a sheep or even larger game.

Another type in common use in Europe has three posts which project from the sights at three, nine, and six o'clock. In the center they distinctly show the object shot at but unfortunately these bulky posts cover so much of the field that they are not desirable for running game, admirable as they are for a still shot.

In this country sportsmen, influenced by target shooting, have become prejudiced against the pointed picket so popular in Europe, simply because it is our habit to sight in our rifles and do our practicing on black bull's-eyes. When you use a telescope with a single pointed picket, you cannot tell just how far the picket overlaps the black, which causes the dispersion to be somewhat irregular—running up and down the bull's-eye.

In consequence, many authorities have advocated the use of a flat top post on top of which the bull's-eye is rested, so to speak, just as when using an iron sight. These men are not taking into consideration, however, the increased range that a telescope gives to a rifle. If the post is of sufficient width to cover three to four inches at one hundred yards, and I have never seen a narrower one

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that was practical for quick shooting, it will cover from twelve to sixteen inches at four hundred yards. In other words, if a sheep, bear or other animal is running away, practically the whole beast would be concealed behind the reticule of your sight, when you hold over to allow the necessary elevation.

A friend of mine, an excellent shot, was unfortunately talked into adopting such a reticule and learned to his grief how impractical it was after shooting twenty-three shots at a goat before he killed it. On the other hand, the pointed picket will show up clearly against any form of game because it is so much blacker than there is bound to be a contrast even on a dark furred animal. Even at the longest range one can tell within an inch or two exactly where he is holding.

Long before we seriously considered the telescope European sportsmen used it and definitely established the pointed picket as the most desirable, and my personal experience leads me to believe that they are emphatically right. Within the last six years I have, with the telescope, killed 48 head of big game—thirty at three hundred yards and over and three at approximately five hundred, and in that time I have not had a single wounded beast escape me nor have I fired at any which I did not secure.



CHAPTER EIGHT

Game Shooting and Judgment of Range

TO BE successful the modern big game hunter must shoot straighter than at any other time in our history. Whatever his quarry may be, it is not only scarcer, but that meager portion of it which has survived is far more wary than in our forefathers' times. We read a great deal about the marvelous skill in stalking, tracking and marksmanship of the early pioneers, but personally, I have always taken these stories with a grain of salt, for the simple reason that they did not need such skill to get all the game they required.

Early archives of the Commonwealth of Pennsylvania tell us of the tremendous head of game which the Appalachian region supported. In out-of-the-way places one still finds both the deer and the partridge (our most wary game) unafraid of man. One can imagine how much more unsuspecting of danger the animals must have been in those unspoiled forests.

Another thing of which history tells us is the generally poor shooting of the Continental Army. Much as I hate to cast a shattering stone at a cherished boyhood ideal, I

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am afraid that the Simon Kentons, Boones, and Pat Murphys were very few and far between. For one thing, the average colonist had little time for such things. If he could get his deer at close range by use of a salt lick or a fire light, he undoubtedly did so.

We know beyond all question that when Morgan's mountain men were marching north to join General Washington's army, they had to stop along the line and give exhibitions of their marvelous skill, which was as unheard of by the Colonials of the settled seaboard, as by the British. There are still old papers in existence which graphically describe the exploits of the "wild mountain men."

Every new country developed its super-hunter, but such men are always relatively scarce, so I feel confident in saying that the average skill of today is higher than ever before.

Of course, we have a tremendous advantage in our modern tools. The ancient Kentucky rifles, with all their marvelous accuracy, were usually sighted for sixty yards and it was useless to shoot game with them at much over one hundred, as the spherical bullets which they drove lost energy rapidly. There are substantiated records of astoundingly long shots made with them in the Revolutionary period, but they were sufficiently rare as to draw comment at the time. Of course, there was little need to increase the range until the colonists started to cross the

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open plains. From that time on the old pea rifles began to be superseded by the shorter and heavier Hawkins rifles, designed for more powerful loads and longer ranges.

The early breech loaders had less range and certainly less accuracy than the contemporary muzzle loaders and it was not until the arrival of the ponderous Sharps, single shot buffalo guns, that much thought was given to increasing the range. So much more powerful and accurate were these guns than the early repeaters, that they continued to be the favorites among big game hunters until the arrival of the Winchester 1886 model.

A radical increase in the killing range might be said to have come about with the bolt action smokeless powder rifles of high velocity which permitted the use of previously undreamed-of pressures. As a result, velocities jumped from about 1500 feet as a maximum to 2000. While the .30-30 and similar lever actions which came out in the '90's drove fast light bullets, their construction did not lend itself to a very close dispersion at over 150 yards.

Since the war the advance has been rapid. The bolt action rifle which practically seized the market, being capable of safely controlling so much higher pressures than any of its predecessors, stimulated the production of more powerful powders. A better understanding of chambering and head spacing for far more uniform car-

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tridge cases led to still greater accuracy. Barrels are bored no more perfectly but they are bedded properly in the stocks and the actions are stiffer. All these things lead to greater accuracy, without which high velocity and flatter trajectory would be useless. Nevertheless, the ballistics of our cartridges have in most cases kept well abreast, if not somewhat in front, of the improvements in the arms to use them. In consequence, our ability to kill at long range is limited not so much by the efficiency of our arms as by the margin of human error. We have already reached the point where we are no longer capable of taking full advantage of the potential killing power of our rifles.

The usefulness of any rifle is dependent upon its accuracy and remaining energy at a given range. Using the old types of lever action rifles, shooting black or low pressure smokeless powder loads of under two thousand feet velocity, such as the .45-70, .32-40, .33, and .30-30 one cannot expect groups of less than three inches at one hundred yards, and eight inches at two hundred yards, even with the best of peep sights. The vital area in the shoulder of a deer, bear, sheep or goat may be said to be eight inches, so, allowing for slight errors in aim or miscalculation in range, two hundred yards may be said to be the practical limit of their usefulness under ideal conditions, and when equipped with the crude factory sights, consisting of a coarse blade front and an open rear sight, this limit is lowered to one hundred and fifty.

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But with a modern bolt action rifle of high velocity such as the .30-06, .270, 7 m/m or .280 having a velocity of from twenty-seven hundred to three thousand feet per second and an accuracy of one and a half inches at a hundred, and three and a half at two hundred yards, equipped with the finest of micrometer sights capable of adjustment to half a minute of angle, the skilled rifleman can increase his practical killing range to two hundred and fifty yards.

I do not mean to say that under ideal conditions on a quiet animal with perfect light and an absence of wind he cannot frequently score at greater range, but with normal conditions of light and wind, and the ever varying terrain which makes accurate calculation of distance difficult, the practical range is certainly not over three hundred yards.

But within the past five years, great advancement has been made in the construction of telescope sights and mounts, opening up to the skilled rifleman an entirely new field of endeavor. When such a sight is used on the type of rifle mentioned in the last group, the field of practical usefulness is increased to about four hundred yards under ideal conditions. As an illustration of the use of the telescope sight, let us assume that a caribou or sheep is distant from us some three hundred and fifty to four hundred yards, upon an open mountainside. It is distinctly visible to the naked eye, but when the coarse

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iron sight is laid upon it, most of the animal is covered, and it blurs with the background so that you cannot tell where you are holding. A miss is almost inevitable. But with a sporting telescope the skilled marksman, who is a good judge of distance, can make a telling shot, and lying prone with a strap hold can place his shot where he wants it.

Shooting a cartridge throwing a bullet of 180 grains weight at 2700 feet muzzle velocity, for western shooting the sights should be set for two hundred yards point-blank. The trajectory is such that the rise of the bullet above the line of sight at its maximum height would not be over two and three-quarter inches at one hundred yards. At two hundred it is on, it would fall nine inches below the line of sight at three hundred, and twenty-four inches below at four hundred. In other words for any distance from the shortest up to two hundred and fifty yards, one would make no allowance whatever, as the bullet would be sure to strike in the eight-inch heart area—if the hold was right.

There is no excuse whatever for making sight adjustments in the field. The experienced hunter never dreams of it. The rifle is sighted in once and for all before he starts on his trip.

Assuming that a big ram has a depth of about twenty inches from withers to brisket and is three hundred yards away, if you were to hold the top of your telescopic sight

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precisely upon the top of the withers, the bullet would fall nine inches and hit in the heart area. If, in shooting at the same animal at four hundred yards, you held the top of the front sight up on a line with the forehead, a drop of twenty-four inches would still carry the bullet into the heart area and barring unsteady holding, irregular wind conditions, or inaccurate estimate of the range, the beast would be killed. But such shots with iron sights are impossible.

I do not mean to suggest that many shots should be tried at four hundred yards. In fact, the practice should be most strenuously discouraged. Due to a changing light or to inequalities in the terrain afforded by steep mountainsides and valleys, it is often not easy to judge distance accurately. If one considers the trajectory of even the flattest shooting rifles, one can understand the difficulty of placing the shot right under such conditions.

Assuming that a man had a caribou, a medium size animal, within the aperture of his telescope at what he thought was three hundred yards, and he held on the withers, allowing for a fall of nine inches. If, as he might very easily do in the high rarified atmosphere of the West, he underestimated the range by one hundred yards or more, his bullet would fall twenty-four inches, and if it did not completely miss the body of the animal, it might only break a fore-leg and send it away critically wounded to die in misery. Such shooting must be condemned.

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While stalking in the highlands of Scotland in the fall of 1930, I was the guest of the Duke of Montrose on the Isle of Arran. At that time I killed two stags at over three hundred yards and I fear that I was a bit cocky about my shooting, because a week or two previously, while shooting at Erchless in the northern part of Inverness-shire, I had secured three running stags from one band at over three hundred yards with three successive shots.

In discussing this with His Grace, he made the comment that the Scottish and British stalkers in the highlands did not ignore the scope through lack of familiarity with it but because they felt that there was more sport to be gained by stalking within range with iron sights than by becoming skilled in the use of the glass and dropping their game at long range. There is a great deal to be said for this argument.

Fishermen are using lighter tackle for trout and salmon every year. The true sportsman scorns worms and gang-hooks. His object is to secure a fish after giving it every possible advantage. In the same way we are using twenty bore guns more frequently in place of twelve bore and, this being so, is not the use of a telescopic sight on game somewhat questionable from a sporting point of view? Undoubtedly so, but when used with discretion within normal ranges, the precision with which it permits the sportsman to place his shots makes it a very humane



A FINE SCOTCH STAG BROUGHT DOWN BY THE AUTHOR

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instrument. It is far better to stop a stag or a sheep with a well-placed shot that kills it immediately, through the use of the telescope, than to misplace a bullet at the same range, sending the animal away to be followed up and subsequently killed or lost. In consequence, I believe the telescope has more in its favor than against it, particularly in a wild country.

Nevertheless, when I returned to stalk stag and wild goats with His Grace of Montrose in 1932, I left the telescope home out of deference to his views—and I must confess I had much more fun.

While the big game hunter should practice at offhand shooting from the free, standing position, in the field he should take every advantage of the prone or sitting position or even the friendly support of a rock or a nearby tree. Except when stalking on the open plains or in the mountains high above timber line, he must be prepared for a quick shot on the run, in cover more or less thick, at game which has seen him first. Under such conditions there is usually no time to take advantage of a rest. The higher one is situated the better, since he can then get a more or less unobscured view over the low vegetation close to the ground. It is safe to say that the majority of the game killed under such conditions receives its quietus at less than sixty yards. No rest is needed if one is capable of hitting anything, for the mark is a big one. The only difficulties are obstructing brush, poor light, the element

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of surprise, and the speed of the quarry. No allowance is needed in elevation, and if one holds on the shoulder and swings with the mark, no forward allowance is required. In fact, using a cartridge such as those in the preferred group, I personally let off the trigger as the brisket touches my front sight on a broadside shot at two hundred. However, the personal factor enters here, and at that range the average man should probably hold about on a line with the nose and slightly lower.

Speaking of the judgment of range, there are several ways in which, with a little practice, the sights or the bore of the rifle may be used as a very accurate range finder.

This is easily done with the telescope sight. The most popular reticule for game shooting is a post that stands out black against the game. Usually the tip of this post will cover four inches at one hundred yards. Suppose you see a sheep off on a hillside. A big ram is roughly but sixteen inches wide from side to side. If your telescope post is exactly the same width as the sheep across the stern or the chest depending on which way he is facing, you know he is approximately four hundred yards away.

To a certain extent, the same estimate can be made with iron sights. The average high velocity rifle has a rather high front sight (to compensate for the barrel, which is thick at the breech and tapered toward the muzzle), hence it is merely necessary to ascertain what

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this front sight subtends at a given range. If it subtends three feet at one hundred yards, it will subtend six feet at two hundred and nine feet at three hundred.

Suppose you saw a distant moose. We will assume that the average moose is about six feet at the top of the withers. If the moose looked half the height of your front sight blade, you would be practically certain he was about four hundred yards away.

The old Scotch deer stalkers prefer to look through the barrel of their gun, which is a more accurate method. Lie down on a hillside in a pasture country, remove the bolt from your gun and sight on one of the cows lying in the foreground. If you watch how much the field of vision through the bore of your rifle overlaps the cow, and then accurately measure the distance to it, you have a basis for the judgment of range. To illustrate, place your eye close to the breech and aim the bore upon the cow; from nose to tail broadside she completely fills the bore. You pace the distance and find it is 150 yards—very good! The next time you do this you find that your field of vision subtends about three times the length of the cow, and you know the range is about 450 yards.

A word should be said here on the subject of properly sighting a rifle. For emphasis I will repeat that the sporting rifle should be sighted for a given range, depending upon its capabilities, flatness of trajectory and energy, and then the sights should be left severely alone. Only the

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novice fools with the sights in the face of game. The skilled marksman has, by practice, accurately learned the height of trajectory and the fall of his bullet at given ranges and he makes allowances for this just as he makes allowance for variation in wind. He never corrects for it. Suppose you corrected the sight for a shot at a deer at long range and missed him. A deer can cover ground about as fast as a polo pony. What good would your correction be for a second or third shot, by which time the deer had covered another hundred yards?

Do not try to sight your rifle in a vise, because, although sometimes it will shoot accurately, it will not shoot to the same point of impact. The vise retards the natural vibration of the rifle and it may shoot six or eight inches from its normal point of impact at one hundred yards. In the same way, machine rest groups are useless for the sportsman. They graphically illustrate the accuracy of which the rifle is capable, but they do not indicate where the rifle will center its dispersion. Never rest the muzzle of your gun on a stone wall or any other hard surface. This tends to make it shoot high, as the bullet will always drift away from anything against which the barrel is held tightly.

The best method is to lie prone with the fore-end of the rifle resting on a pile of soft blankets. These should be of sufficient height so that one does not strain the head and neck in raising the eyes to the line of sight to hold on the

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target at, let us say, one hundred yards. The best thing to do is to fire a preliminary group at twenty-five yards from this prone position, shooting at a one-inch bull's-eye. If you start in at one or two hundred yards, you may have to fire a great many shots before you get the approximate adjustment. The rifleman should be careful about his movement in connection with the shot. He should try in every possible way to get every shot off in the same manner as the previous one. He should change his position as little as possible between shots, but he must take all the time he requires. Breathe deeply and let out part of the breath. Carefully squeeze the trigger without any semblance of balk or flinch. Rest the top of the front sight on the bottom of the bull's-eye at six o'clock so that they just kiss each other. Shooting in this manner a skilled marksman should have no difficulty in getting a two-inch group at one hundred yards with a rifle of the type mentioned in the preferred group. When he has adjusted the sights to hit pointblank at one hundred, he merely has to elevate them sufficiently to shoot $2\frac{1}{2}$ inches high and he knows he has the approximate range for two hundred yards, when using the .30-06 or a load of similar velocity.

Remember always that the back sight should be moved in the direction in which you want to shoot. If the front sight is to be corrected, it should be moved in the opposite direction.

Some prefer to shoot off a table rather than the ground.

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I do when trying to sight a rifle carefully. Get any high table out-of-doors, where the light is good—preferably with the sun at the back, though I prefer a day without any sun so long as the atmosphere is clear. Place a chair directly behind the table facing the target. Pile your blankets on the far side of the table and then, resting both elbows on the table, lean forward in the chair so that the chest rests against the edge of the table. Place the forearm of your rifle upon the blankets and shoot as described heretofore. Remember that no man has more confidence in his ability to kill game than the one who knows what his rifle is capable of doing and where it will shoot at a given range.



CHAPTER NINE

How to Hit 'em With a Rifle

MANY sportsmen go to great pains to explain their success as game shots, but for some strange reason they cannot hit a target. Apparently the woods are full of 'em! It is odd that a man who has a natural instinct to snap-shoot and hit the shoulder of a vanishing buck at gray dawn or twilight, when he can hardly see his sights, cannot punch a few consecutive holes through a clearly seen bull's-eye, silhouetted against a white background, from the prone position at a known range.

Before we go any farther in this discussion of how to hit 'em with a rifle, I wish to make two dogmatic statements from which I will not withdraw.

First, there is no such thing as a born rifleman. Some people have more aptitude for it than others, but it is practice that leads to skill at this game.

Secondly, the foundation of good rifle shooting is target practice. We all must learn to crawl before we can leap.

Under certain conditions, it is possible for a man to

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become a good game killer without target practice. We have all met the rare individual who has spent most of his life back in the woods and whose target shooting is limited to sighting in a new gun; who knows nothing about elevation, windage and ballistics, but is "hell-on-two-feet" for the unfortunate deer that breaks cover at short range. That does not mean he is a good rifle shot. He is just highly efficient at one phase of rifle shooting—that of killing deer at short range. Yet some of our trained schoolboy marksmen could make a monkey out of this expert deer slayer when it comes to lying down and killing a sheep or an antelope at long range in a cross wind.

There are old-timers in the West who, in the course of a lifetime in the open begun in the days when game was plentiful, had the glorious opportunity of actually learning to shoot accurately on game; but those days are gone forever. The average sportsman is not, and never can be, in this class. Even if he had the opportunity to kill so much game, a preliminary course on the target would teach him more rapidly.

Under most conditions the deer shooter does not have to be a very good shot, provided he is cool, quick and does not catch "buck fever," from which, like measles, one is usually immune after the first exposure. Even if he is only a fair shot, he should be able to acquit himself creditably under average conditions. After all, it would not take a great deal of practice to hit a deer's shoulder.

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area with a bean-shooter at the distance at which most of them are killed: namely, under sixty yards. Deer hunting calls for quick shooting and moderate accuracy. I do not mean constant shooting at the bull's-eye, although this is necessary for the preliminary stages.

The beginner should stick to it until he can make six-inch groups at two hundred yards from a prone position and eight-inch groups at a hundred yards standing and has learned where to hold at three and four hundred yards. When he can do this, it is time enough to take up rapid fire, for if his aspiration is game trophies, rather than silver cups, he must learn to shoot rapidly as well as accurately.

Practice at kegs rolling down-hill and shooting at swinging targets with a small-bore are some of the many solutions; but if he wants to keep fit, he must occasionally revert to the target, both offhand and prone. It is good for his ego, for the target is uncompromising. It tells beyond a doubt just how good a marksman you really are.

When a boy, I saw the late President Roosevelt shoot several times. His target was an old stump across the valley at Sagamore Hill. He never shot deliberately at it. Quickly working the lever of his rifle, he would empty the magazine and then check the results.

While by no means a brilliant marksman, Theodore Roosevelt had that practical ability to keep his group fairly close to the mark, which on at least one or two

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occasions was comforting to him and his companions on his African safari.

The deer killed in America easily outnumber all other species of big game combined. In consequence, as the deer takes the brunt of our big-game hunting, it would, if for no other reason, be of first importance. The fact remains, however, that it is also the most difficult of our big game to bag.

But deer hunting, as it is practiced in different parts of the country, varies a great deal. Those killed east of the Mississippi River are usually brought down within seventy-five yards, while west of the Mississippi the average range is extended to somewhat less than two hundred yards. There are places even in Pennsylvania on burnt hillsides where shots of three and four hundred yards are sometimes to be met; but in shooting throughout Maine, New Hampshire and Vermont and down through the deep hardwoods of the Appalachian Chain and the swamps of the Mississippi Valley the whitetail is usually a short-range proposition.

If one is a good still-hunter, even under such trying conditions, the average shot would be at a standing target, but unfortunately the hunter's ability does not usually permit him to try conclusions with his game without disturbing it. Usually he has but a glimpse of a white flag bouncing hither and yon in a wild dash for thicker cover. There is a startling crash, and the target flits like a will-

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o'-the-wisp in and out between the hardwoods, flying over windfalls and disappearing into tangled gullies, where a quick, instinctive shot, almost as one would point a shotgun at a partridge, is all that is offered.

In the past ten years I have killed fifty-six head of big game. In that time I have lost no wounded animals and have missed five that I shot at, and all five were white-tailed deer.

Far too few sportsmen pay the attention they should to the proper fit of their rifles. Having ascertained exactly where a gun shoots when aimed deliberately from the prone position, it behooves the hunter to put up a target of generous proportions at between twenty-five and forty yards' range. I would suggest a target some thirty inches square with a bull's-eye about eight inches in diameter.

Facing the target, the shooter should hold his gun at the usual carrying position in the woods, point it quickly at the bull and fire without any correction of aim. I do not suggest that this is the way to kill deer, but a few groups fired in this manner will indicate whether the natural inclination is to shoot high or low, or to the one side or the other. The stock should then be corrected by a competent gunsmith to bring the group into a more general line with the center of the bull. By no means do this by correcting the sights, as they will be off when a standing shot is afforded. If the group is too high, the toe of the stock should be shortened so as to depress the

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muzzle; if the group is too low, it is obvious that the toe should be lengthened. The comb of the stock should not be altered, as a high comb is necessary for accurate rifle shooting.

For the sake of emphasis I repeat: one should not conclude from this that I recommend a haphazard use of the rifle. Speedy shooting does not mean hastily firing or blindly letting off a round at a vanishing buck. The shooting of a skilled performer may be so rapid that to the audience he appears to do it instinctively. But all good shots aim.

With practice one can learn to shoot accurately with remarkable speed, but this skill is acquired only by thorough familiarity with the rifle. The man who will stand his rifle in the corner of his room, pick it up every night and morning, and toss it to his shoulder, aiming it at a small mark, such as a door-knob or window-latch, will find it far easier to get on his deer in October.

Stern shots with low-powered rifles should be avoided, as it is difficult to reach the vitals, yet it is often a case of taking rear shots or going home without venison. In using a rifle shooting a powerful cartridge, such as the 30-06, I have never had a beast raked in this manner escape.

The best combination of sights for running game consists of a peep with a large aperture, through which one has a generous view of the landscape as well as the deer,

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used in conjunction with a fairly large ivory-bead front sight which will show up distinctly in the uncertain high lights and shadows of the brown autumn woods into which a deer melts like a past memory. If the rifle shoots a typical deer cartridge, such as the .25-35, .30-30, .32 Special or .303 Savage with a muzzle velocity of 2200 feet per second, the sights should be corrected to strike pointblank at one hundred yards. Under these conditions, without correction in hold, the vital eight-inch square on the shoulder of a crossing deer will not be over- or under-shot from the shortest range to 150 yards.

If the cartridge is of the modern high-velocity type, such as the .250-3000-100, 7 m/m or the .30-06 with a velocity of 2700 feet per second or higher, it had best be sighted for a pointblank range of two hundred yards to gain complete advantage of its flat trajectory should a long shot be afforded across some woodland pond or burnt land. With such flat trajectory as this velocity affords, the gun will not shoot more than three inches high at intervening ranges, nor more than nine inches low at three hundred yards, and no one can hold more closely than this under average game-shooting conditions.

When a deer is jumped, the first thing to do is to plant the feet squarely facing it. There is no use in trying to shoot a rifle steadily when standing on one foot or twisted about in an off-balance position. If you cannot shoot consistently under such conditions with a shotgun, you

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certainly cannot do so with a rifle. Standing with the weight evenly balanced on both feet, the shooter should quickly bring the rifle to his shoulder, look through the peep and with the weapon lightly balanced in both hands toss the front sight ahead of his game, with a light pressure on the trigger so that as the deer and the sights come together he can touch it off while swinging with his quarry.

Throughout this book I have emphasized the importance of swing. This, the greatest single factor in successful shooting, is quite as vital to the big-game hunter as to the wing shot, for he has not the generous distribution of pattern to assist him, and the little bullet must go into the right spot. Proper swing overcomes the necessity for lead, and one should never have to lead with a rifle to the extent which he does with a shotgun, at least not on woodland game.

In the first place, fleet as the deer may be, he is, at the most, traveling half as fast as a duck. I doubt if deer ever make a burst of more than thirty miles an hour in cover. On the other hand, at forty yards even a moderately powerful rifle with around 2200 feet muzzle velocity is driving its single projectile at least three times as fast as the swiftest shotgun loads. In consequence the deer at from fifty to sixty yards, going diagonally away from the hunter, should require practically no lead. If the trigger is pressed precisely as the deer's foreshoulder runs into

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the front sight, the bullet should connect in the proper area.

The shooter should always remember to hold low. There is far more room above a deer than there is below it. The heart rests upon the ribs; it is not midway between the withers and the elbow, as is commonly supposed, and a high shot in the lungs may lead to a long chase. On the other hand, a broken foreleg from a shot too low, although it should be avoided, may throw the animal down and will certainly slow its progress.

Another reason for holding low is that in shooting quickly one is liable to jerk the muzzle up; also, in the keen anxiety to hit, one may not check his stock as he should, and consequently he will shoot high. Thousands of deer are missed clean because the shooter has looked over the top of his rear sight without knowing it. This is one of the reasons why I prefer the peep (receiver type) rather than the open sight on the barrel.

If the deer is crossing at right angles, more lead is, of course, required. The necessary lead varies with the individual, as it does in shotgun shooting. In my own case, I know that in shooting at such a target, if my front sight is forward of the shoulder on a line with the deer's jaw, the shot is correctly placed.

A few years ago I had an amusing experience at the Camp Fire Club of America when competing in the running-deer event at the June competition. The target was

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a full-sized deer on a narrow-gauge railroad track which crossed an open glade through the woods at the speed of a frightened buck. It dashed out into view at one side and was exposed to the shooter for twenty-five yards before it disappeared into the woods on the far side. The target was the natural color of a buck, but the bull's-eye, which was black, was on the reverse side of the shoulder, obscured from the shooter.

The competition was offhand at the standing position, with the rifle held at the ready and with the safety on. The arm could not be raised until the deer came in view. One shot was permitted at every crossing, and five shots were fired, three to right and two to the left.

My third shot unfortunately broke the frame upon which the deer was fastened. It took quite a while to repair it; so the referee sportingly said that I could accept my three shots or begin over again. I chose the latter. In the meantime, many kind observers who were watching my bullets strike in the sand bank, some twenty-five yards behind the deer, cautioned me that I was shooting too far back. I continued to hold as I had before, on the low line of the body but forward of the jaw.

At the end of the string, when the score was reported from the pit, it was found that I had a perfect score of eight shots in the black, or fifty plus thirty, each bull's-eye scoring ten. I believe this record has stood ever since. I cite this case not in self-admiration, for I very much

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doubt if I could do it again, but to show that confidence in one's rifle shooting is of primary importance.

Too much emphasis, however, should not be put on shooting running game. It is an old established American feeling that it is sportsmanlike to stand on one's hind feet and shoot. This idea has merit but it leads to far too much indiscriminate shooting, taking chances which should be avoided, and causes untold misery and suffering.

No matter how skilful one may be offhand, he should bend every effort to kill neatly with a single bullet. You cannot kill many deer by attempting to lay a box barrage around them with a repeating rifle, and you cannot scare them to death. One steady shot from a rest usually brings home more bacon than twenty fired rapidly.

In open country one should at every opportunity lie down to shoot. If the cover will not permit this, sit down. If it will not permit sitting down, grasp a nearby sapling and rest the rifle barrel upon the thumb or back of the left hand. Anything that will assist a steady hold is permissible. It is always good sportsmanship to take every advantage that will help you make a clean kill.

Big-game shooting in the mountains of the West is much nearer the expert rifleman's game. As a rule, the quarry is seen first and carefully stalked from some distance to within practical range. Therefore, the first shot is usually fired at a still target, but the range is much

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longer than when shooting in the woods. A perusal of my game register indicates that on three western trips my average shot was about two hundred and fifty yards. It could undoubtedly have been shortened to an average of about two hundred yards, but I had complete confidence in the high-powered rifles I was using.

Almost invariably the shooter has all the time he requires to lie down comfortably, put his arm through the gun sling, wait until he has completely recovered his wind and then ease off the shot as if he were firing at a target. Even when it is necessary to shoot at short range at running game, he can do so with a free conscience, because as a rule the impact of the first bullet can be spotted and the hold corrected to increase the lead or elevation for a second burst.

The difficulties to be contended with, however, are many. One is often quite exhausted by the laborious climbing at high altitudes. This tax upon the heart increases the pulse, and unless one is very fit he is apt to be unsteady, even from a prone position. Due to the clarity of the atmosphere and the tremendous size of the panorama before him, it is exceedingly difficult to judge range accurately. There are also the almost endless cross currents of winds, sometimes amounting to severe gales. Despite this, windage is far more often over-emphasized than under-emphasized. I have very seldom had to make any allowance for it on sheep or large game when shoot-

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ing a cartridge with the speed and wind-bucking ability of the .30-06.

While the conditions are so different between Scotch stalking and American still-hunting of deer, we can at least take a leaf from the note-book of the Scotsman, who believes that to wound a beast is unpardonable. One never fires a shot in the highlands unless the stalker and the sportsman are mutually certain that a single shot will result in almost instantly killing the stag. It is considered very bad form by the British sportsman to have to shoot at a stag a second time.

Up-hill and down-hill shots taken at a very steep angle appear to be much longer than is usually the case. Shots across water are usually underestimated, as are those across deep valleys. Mist tends to magnify, and we often think that an animal actually below average is an unusually large one.

A running deer cannot go up a steep hill as fast as on the level, although it may appear to do so. Don't lead it too far. Down-hill shots are frequently overshot or struck high in the back, where the bullet does little harm other than to sheer off a rib. Hold low, particularly if the quarry is running.

Above all, try to keep cool. You cannot control your rifle until you can control yourself.



CHAPTER TEN

Percentage Shooting

SOME years ago in a sporting magazine there was a discussion as to the proportion of kills to cartridges which could be called good shooting, and the opinion was then expressed that a man who killed forty percent of the birds he fired at might consider himself a good shot. Lord Walsingham put it a bit lower than that, believing that an average of thirty percent was good shooting. But we must remember that when Lord Walsingham killed 1070 driven grouse to his own gun in a day, his average of kills to cartridges was over seventy-five per cent. It has been said that in the case of driven grouse an average of eighty percent for the first week of the season, seventy percent for the rest of the month and forty percent for September may be ranked as remarkable shooting.

Let us first consider the snipe. The writer while never having had the experience on snipe which many Irishmen and some English sportsmen get on the bogs of Irene, nevertheless has been fortunate at times to run into some very good snipe shooting here. I refer, of course,

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to the full snipe, which is erroneously called the jack-snipe by some, but which naturalists tell us is really the Wilson's snipe, named after the famous ornithologist.

What is one man's meat is another man's poison, and I must confess that the snipe has always been to me a very easy bird. You hear many shooting men comment upon how difficult they are to hit, but I believe that my average is higher on them than on any of our other feathered game.

I remember one day when shooting ducks near Lake Winnipeg. I came in early with my limit and walked a nearby meadow for snipe. It was blowing a gale and I had only No. 4 shot and a duck gun but I grassed seven straight.

Many a time, while the guest of a sporting companion in the South, I have forsaken the battery on dull days when the ducks were not flying and gone ashore to walk a little bog adjoining his property. I quite frequently brought in, under what are supposed to be difficult conditions, four or five brace with an expenditure of less than a box of shells.

Bob-white—called quail in the North and partridge in the South—on which many hunters enjoy a very high average, has for some reason always been my most difficult problem. He certainly is no more startling than the ruffed grouse or the pheasant, and yet I have always felt

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that my shooting was poorer on bob-white than on any other breed.

Of course, it is obvious that in considering the percentage of kills to cartridges one must allow for conditions, and, for that reason, it is idle to make judgment on one day's shooting such as that which I described. There are many other factors on which the truth depends.

A bird that is difficult to a first-class shot may be altogether impossible to a second-rate performer. The good shot, if he is a keen sportsman, may attempt it, and he may not kill it. The other hunter will never attempt it and consequently his average is saved.

One fall in returning from a hunt in Alberta, I went to shoot with an old associate in Saskatchewan. We had a famous pass between two lakes from which to gun—a strip of land so narrow that the birds hardly ever fell on shore. Practically all day long the ducks flew across from one lake to the other in every direction. In one morning by eleven o'clock I had killed my limit and collected thirteen different varieties, including widgeon, gadwall, black ducks, spoonbills, ruddies, teal, scaup, mallard, canvasback, redhead, and pintails.

Some of these ducks are large and others are small; some are fast flyers and others are slow; some have a short, fast wing beat and others have a long, slow beat, and this variation in size and pace makes it very difficult to judge their speed and height. It seemed almost impos-



THE MORNING'S BAG ON A SASKATCHEWAN PASS

P E R C E N T A G E S H O O T I N G

sible to lead some of them sufficiently. An old canvasback comes bustling across the pass with the wind under his tail as if he was ten minutes late for breakfast down at the marsh at the foot of the lake. A few minutes later an old spoonbill, or a sprig, would come cautiously beating up the wind, looking around to see who was there. It was decidedly the most sporty shooting I had ever encountered, and at the end of four days of it, in making a count of my shells and the birds bagged, I had expended exactly two and one-half shells per bird.

This on the face of it would appear to be remarkable shooting, and I am not so modest as to deny that it was a good average. On the other hand there were certain factors which assisted me, among them being the three excellent Irish water spaniels we had for retrievers. It was seldom necessary to fire a shot at a cripple on the water. I believe I fired less than twenty-five shells in ten days at cripples, and very few birds escaped; if they were hit hard enough not to dive and swim faster than the dogs they were collected. There are certain conditions under which this is impossible, and often a man must shoot cripples over again on the water. It is a very easy thing to shoot three or four shells at one cripple before you kill and the average suffers accordingly.

A few days later, for the variety of it, I went up to shoot a marsh at the head of the lake. About three o'clock in the afternoon the gadwalls and mallards started to

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fly in. I killed four doubles and three singles without making a miss. The birds were hovering over my decoys just like balloons and any child could have killed them.

I promptly went back to my pass shooting. The marsh shooting was too easy to be called sport, but it would have built up a magnificent average.

There are a few sportsmen, and I am glad to say that I think there are only a few, whom I might call percentage shooters. They are particularly numerous among the partridge and woodcock hunters. These are the men who will tell you that they went out and killed seven or eight ruffed grouse last week with seven or eight shots. I am always suspicious of these men. There is no sportsman on earth who can keep up anything like that average.

People have told me of men who never missed a ruffed grouse. Show me such a man and I'll show you a man who does not shoot at one-third of the birds that fly in front of him. He says they are impossible, or he could not get on them in time, or makes some other excuse. Under some conditions a really good shot can make a very fine score; but the sportsman who is out for sport and throws his load of shot at every bird that gets up within fair range has a much better time, and he is a very good shot indeed if on ruffed grouse he brings in one bird at the end of the season for every four shells expended.

Taking duck shooting as a whole, irrespective of

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whether you are shooting point or marsh, battery or pass, if at the end of the season, not counting just your red-letter days, you have collected one duck for every three shells you are a first-class shot.

If on quail shooting and snipe shooting you can average through the season two and one-half shells per bird, you are a good shot. If you can average two shells a bird you are a very good shot, and if you can bring this down to one and one-half shells to a bird you may consider yourself an expert.

I learned in shooting for the field trials that there are many other things which go to make a good average. If a man had some other excuse for shooting than just his keenness to kill game, as the live bird pigeon shooters did in the old days, when they shot for heavy stakes, he probably would shoot with a concentration and pent-up energy which would bring better results. Few of us go out to shoot with that feeling.

I have shot for a great many field trials in the last few years, and have frequently had some of the gallery of onlookers say: "How can you shoot that way? I should think it would be terribly hard to do your best before three or four hundred pairs of eyes." As a matter of fact, it is not. I know that it is tiring, and that I feel let down and exhausted after a couple of tense days of it, but the realization that if I miss a bird I may do some noble dog, or some conscientious trainer who has worked hard, a

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serious injustice makes me keener than I would ever be if I went out to shoot ducks for my own pleasure. I discovered that as a result I shot better under such conditions than I expected.

The first time I went to Fisher's Island to shoot in the field trials my knees were trembling under me when I walked out, back of the first dog unleashed. I felt that I would never be able to get that gun off when a bird flushed in front of me. I missed one bird that day and made a clean score on the second day for a total of some thirty-six pheasants and ten or twelve large hares. I do not mean by this that I did not use my second barrel, but I never shot at anything that escaped. As at least three-quarters of the time my second barrel was unnecessary, I could not possibly have done worse than four birds to five shells.

Now, one might say that English pheasants over dogs are much easier than other varieties, but the springer hustles them out faster than any other bird dog; and you must consider that in shooting over these dogs, to give them every advantage you must take the very longest opportunities afforded. These are frequently shots which in the field you would pass up and flush the game a second time. I can assure you that this consideration went a long way to make it as difficult as any other form of sport. There was also the mental hazard of one of the inexperienced gallery getting off to one side where he did not

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belong, and one always had to watch out sharply where one was shooting.

Shooting at the Cornwall Field Trials, my partner, Mr. David Wagstaff, and I went through the first morning and shot down fifteen pheasants without either of us using the left barrel of our guns. In the afternoon we went clean until quite late when the light became poor and then, I believe, we each missed one. I have shot informally with this same gentleman over the same ground and I never was able to make as good a score. It all shows that we usually can do what we have to do.

To sum up this ever-important subject, I think it is a very bad thing to allow yourself to become a percentage shooter. You are liable to spoil your sport by taking only easier shots and avoiding the most difficult ones.

I think some of the best fun I had shooting in Saskatchewan was going out to the pass with my Irish friend on a raw, windy day, when there were few birds flying and standing there, trying to wipe each other's eye at birds which were practically at the limit of the twelve-gauge gun. On that day you can rest assured that averages went all to pieces. I think I never fired at a bird under forty yards—I may have shot at them from there up to sixty, though I seldom shoot at sixty yards—but I know quite well that my bag must have represented about six ducks to forty-five shells, and I had much more fun doing it.

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I had the honor of being one of eight guns invited to participate in several shoots on one of the biggest private preserves in North America—that of Mr. Robert Goelet at Glenmere, N. Y. With one or two exceptions, these gentlemen were all international sportsmen who had had a wide experience shooting driven game in Scotland and Europe.

Our bag for one day consisted of 510 ducks and 300 pheasants, without the pick-up which would be made the next morning by the game keepers and which invariably added about a hundred birds to the bag.

The shooting was quite similar to that universally adopted in England and Scotland. About seventy-five beaters are employed to drive the game over the butts to the waiting guns, each shooter standing with a loader behind to load a second gun and hand it back to him. It is quite natural that when the owner has reared his game at a cost of \$5.00 to put a bird over the guns, he does not look kindly upon the duffer who misses often, for a great deal of this game is permanently frightened away from the estate. In consequence, one is not encouraged to conserve ammunition. Our host I am sure would much rather see a man burn up 75 shells and kill 25 birds than use a box of shells and kill only fifteen.

We were fortunate enough to establish a new record for the shoot on the two duck drives which were organized for our entertainment. Each drive lasted fifteen

P E R C E N T A G E S H O O T I N G

minutes, in which time, as I have written, ten guns killed 510 birds. On my first drive I occupied one of the end butts where the birds did not come over as in other sections of the grounds and I made a notation at the end of the fifteen minute period when we ceased firing that I had killed fourteen ducks with twenty-four shells. But on the second drive, I was in the thick of it with ducks coming over me in a constant stream. I could not change guns rapidly enough to take all the opportunities afforded me, yet they were all singles or pairs. This time I burned up ammunition faster than I ever have before in my life. I found when I finished that in the fifteen minutes I had used 84 shells to account for approximately thirty birds. In view of the fact that I was taking every chance at very high and fast ducks, I consider this rather good.

There was one gentleman on my left who I noticed was performing in remarkably fine style. He was in excellent form, having just returned from England where he had been shooting steadily since the 12th of August. On two occasions he had three birds dead in the air at one time. I asked him afterward how many birds he had killed and on the last drive when he killed forty-five birds he had consumed 125 shells. I consider this expert shooting which it would be very, very hard to beat, and I do not believe that a greater percentage of ducks was ever killed in America in such a short period.

Driven pheasants are not considered by the experts of

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Europe difficult birds but all admit it is hard to get the knack of shooting them. Because of their length and habit of setting their wings and pitching down after they have crossed the high woods over which they are driven, they are the most difficult mark until one becomes used to them. I felt very much embarrassed by my shooting at the time and yet when I finished up my day I found that I used 310 shells to account for a total of approximately eighty-eight head of game. Considering the rather novel condition, I felt much better about it when I had made my check-up, and this I believe is the only reasonable excuse for keeping a record of your percentage of shots to kills. If you keep it honestly, it is a certain check upon your ability.

The percentage of kills in America that entitles a man to consider himself a fair shot is one to four; the percentage of kills which entitles a man to consider himself a very good shot is one to three.

This does not mean one variety of game under one condition on one day. I am talking about the chap who shoots about thirty days during the year and takes wildfowl and upland game under every condition and at every available opportunity without hedging on a shot. If he has a head of game registered for every three shells he has my respect. There are quite a few who can do it, but they are not so plentiful as one might believe.



CHAPTER ELEVEN

Duck Guns and Duck Loads

THREE is not a state in America which does not afford its sportsmen some form of wildfowling.

The species and the conditions under which they are gunned vary in different localities, and this calls for different tools and loads, all of which leads to discussion and difference of opinion. What is one man's meat is another man's poison, yet both may be right.

To the average man, duck shooting implies long range shots. This should not be so in most localities, if the hunter is rigged properly; but in selecting our guns and loads, most of us have these long shots in mind. That is one of the reasons why many ducks escape to return and run the gantlet another day.

We should first consider the average man's needs under average conditions. The special purpose guns will be taken up later.

I have shot ducks from northern Saskatchewan east to Nova Scotia and south to Old Mexico. I have shot point, pass, bush blind, battery and marsh and I believe I am qualified to say that since most of the sportsmen are seek-

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ing greater power and longer range, the result is that a very considerable majority of them are over-gunned.

I would not imply that the Magnum gun is unnecessary. The reclamation of swamp and marsh lands has concentrated our birds, while the number of gunners has enormously increased. In the open season, almost every point is shot hard, so that unless forced in by inclement weather and winds favorable to the hunter, the birds, which are very much more gun-shy than they were a generation or two ago, fly both wider and higher. Under such circumstances there is a real need for long-range guns.

I predicted the revival of the ten bore and the arrival of the American twelve bore Magnum long before its début. Some years back, when I first mentioned the Magnum type gun, more than one American gun maker astonished me by asking for further particulars. Today they are being introduced as a new idea, though they have been known and used in European waters for over twenty years.

There is a growing need for them here and they will become increasingly popular, but they are not the tool for the average man. He has not the skill to get much more out of a super gun than from a standard weapon. Unless a sportsman sees to it that his skill keeps pace with improved guns and ballistics, the increased power is wasted, and most of us do not or cannot improve on



WAITING FOR DUCKS ON A SASKATCHEWAN PASS

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our personal ability to that extent. Either we do not have sufficient practice, due to lack of time or funds, or there are physical and mental drawbacks. Sometimes it is a combination of all, which is fatal.

It is for this reason that we so often hear a wildfowler say, "I can kill just as many ducks with a twenty bore as I can with a twelve bore and kill them just as far too!" So he can, no doubt, which would imply that a twenty bore was as effective as a twelve, which it is not and never can be. What it really means is that he can kill his birds more easily at the range at which he is capable of hitting them, which is generally from thirty-five to forty yards. It does not mean that the twelve bore has not from five to ten yards' greater killing range nor that a better marksman could not bring out the twelve bore capabilities at a longer range.

Right here let me inject the statement that I am a good shot at ducks. I gladly admit it, judging by the ability of those with whom I have gunned, and I know that I miss more ducks than I hit at forty yards, miss a great many more than I hit at fifty yards, and seldom hit at sixty, though I have a twelve bore capable of doing it consistently. At average range, thirty-five yards or less, I account for most of those attempted.

Also, this actual thirty-five yards just mentioned most sportsmen would speak of as forty, and my fifty is what is generally and erroneously judged to be sixty. We

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seldom see a bird killed at an actual sixty yards which is not claimed to be at least seventy-five.

From the distance point of view, duck shooters are divided into three classes:

1. Fifty odd percent—Duffers, inexperienced fellows, who blaze at everything no matter how far away—even two hundred yards and over.
2. Forty odd percent—Fair shots who overestimate distance and refrain from accepting many chances which they have come to believe are out of range through their consistent inability to connect.
3. Three percent—Those first-class shots who, actually knowing the range of the birds, are still consistently able to bring them down to the limit of their gun's reach. I have known probably two such. Note: I am not and never hope to be in this class.

This being so, the average man does not require a full choke gun and large shot, for large shot shows its superiority only at long range. He is best equipped with a strong modified gun making a 60 to 65 percent pattern with $1\frac{1}{4}$ ounces of chilled sixes, such as the ammunition companies are now loading.

I know many of the old market gunners of Long Island and the Chesapeake and have examined their guns. Seldom were they full choke bored; many of them were ten gauge, but still in most instances they were modified in both barrels.

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Take, for example, battery or bush blind shooting on open water, the methods by which the large bags are usually made in the East. The first shot is generally at from twenty to twenty-five yards' range and the second at thirty to thirty-five yards. Why, then, handicap oneself with a full choke weapon, which is not needed for any shot except those beyond forty-five yards' range where most of us miss more of our birds than we hit?

I have done more deep-water battery shooting than any other kind of wildfowling. Since I adopted a thirty-inch barrel weapon, bored to make a 60 percent pattern in the standard thirty-inch circle at forty yards, I have used a load of $1\frac{1}{4}$ ounces of chilled sixes, driven by $3\frac{1}{2}$ drams of progressive burning powder, and with this gun and load I have killed a higher percentage of my birds than ever before.

I well remember two glorious days on Currituck when, using this combination, I bagged fifty redhead to one hundred and eighteen shells, which constitutes good duck shooting. It is true one often has an opportunity for a long shot at a passing single or flock which the modified gun would not reach, but though we bag a few such each day with a full choke weapon, it is not these which fill up the bag. Be it point, bush blind or battery, our red-letter days are generally made possible by a good set and birds who want to come to it. At such times I have found the full choke weapon a distinct handicap.

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In my opinion, the average man, if he uses a double, should limit it to about $7\frac{1}{2}$ pounds' weight, not to exceed $7\frac{3}{4}$, with thirty-inch tubes, bored first barrel 50 to 55 percent or little better than quarter choke and the second barrel full choke or 75 percent. But if it is a single barrel pump or automatic, open it up to sixty, which with sixes will drop everything that comes inside of the forty-five yard radius and a good many at fifty. The gun should, of course, be a twelve bore, and nothing of small gauge really qualifies for wildfowling.

A good shot can do some very skilful execution at fifty yards with a full choke heavy twenty gauge and at fifty-five yards with a sixteen bore; but such guns must of necessity throw the pellets closely to retain a sufficiently dense pattern at these ranges to kill consistently with the smaller shot charges. Consequently, they are not the proper tool for the average shot. The wildfowler who can kill ducks consistently with a heavy twenty bore at fifty yards can, barring the lack of strength to wield it, do the same at sixty yards with a Magnum twelve and three inch cases.

This matter of gun weight is worthy of consideration. We all think of duck guns as heavy weapons and usually order them so, forgetting that we never use four drams of powder in a twelve bore, as was done in muzzle-loading days. Our heaviest loads are $3\frac{1}{2}$ drams of smokeless and $1\frac{1}{4}$ ounces of shot; no more is to be recommended in



ON A MISSISSIPPI DUCK MARSH



A TYPICAL BATTERY RIG

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a standard bored weapon, and for this charge only $7\frac{1}{4}$ to $7\frac{1}{2}$ pounds' weight is required.

There is a prevalent idea—entirely wrong—that heavy guns and long barrels kill farther with the same load. This impression is a relic of black-powder muzzle loading days. A 28 inch barrel bored to the same degree of choke and loaded with the same shells will kill quite as far as one 36 inches long. The only advantage of the longer barrel is the increased accuracy in holding due to the longer sighting plane.

Some time back one of our American makers, who was beginning the manufacture of Magnums, sent me one to try with an invitation to buy. The gun weighed $9\frac{1}{2}$ pounds though the charge used was only the standard $2\frac{3}{4}$ inch shell. While fairly strong and weighing 165 pounds in my number eleven shoes, I found it impossible to do good work with this miniature cannon. I not only shot behind the sharp angle shots and, though realizing my mistakes, found it impossible to get out far enough in front, but I also shot low because of the unnatural weight of the weapon.

I finally persuaded them to build me one, much against their will, weighing $8\frac{1}{4}$ pounds and bored for the three-inch shell which, despite their remonstrance, was a great improvement. I have since discarded it for an old Magnum of another make, weighing only $8\frac{3}{4}$ pounds, built for me before all the hullabaloo started. This gun is bored

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for the three-inch shells in which I use with no discomfort the equivalent of $3\frac{3}{4}$ drams of progressive powder and $1\frac{3}{8}$ ounces of chilled fours.

This weapon is made with two sets of barrels. They are both bored for the three-inch shell, but one pair is bored to give an eighty percent pattern and the other set only sixty percent. Yet, because of the increased density of pattern secured from the extra $\frac{1}{8}$ ounce of shot, it still remains a Magnum inasmuch as it will kill farther than a standard chamber sixty percent gun with $1\frac{1}{4}$ ounces of shot and still give the advantage of the open barrel for the average shot at close range.

That, to my mind, is the real advantage of the Magnum and if you are an average shot never try to use an 80 percent choke Magnum. By all means, get a three-inch chamber gun, but get it slightly modified so that you can increase your range by shot density and at the same time not sacrifice the advantage of a wider dispersion than a full choke will give.

A modified Magnum 65 percent will kill as far as a standard bored twelve 75 percent at sixty yards and do it more easily. Let the longer shots go if you want to fill your bag.

This brings us back to the market guns mentioned heretofore. These gunners, though they liked their work, were out for business, not sport. Along the eastern coast they used ten bores invariably and, if asked, as a rule said

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they were full choke. Examination disclosed that they were generally nearer half choke. As 1½ ounces of shot were used, such guns killed farther than a full choke twelve and, in most men's hands, did it more consistently, for most of us need a five-foot spread to kill singles at fifty-five to sixty yards.

These old slaughterers of wildfowl could not be talked into considering a twelve bore at all.

Of late years I have found that for point or bush or bush blind shooting a pair of guns is ideal. I lie with a 7½ pound modified twelve bore in my hands, ready for the average shot on decoying birds. This gun is loaded with 3¼ drams and 1¼ ounces either of sixes or of fives when it is particularly windy and late in the fall when the birds are more wary and the decoys are set a little farther out. Beside me is the Magnum weighing just under 8 pounds loaded with three-inch cases and 3¾ drams with 1⅓ ounces of fours for a quick exchange for a chance at a long shot. If geese are anticipated, the load of fours is exchanged for twos.

Nothing larger than twos should ever be shot from a twelve bore for any species of wildfowl. It is a mistake to use BB for geese. True, the BB will kill farther if they hit, but there are not enough of them. The twos will kill just as far as the BB's are certain.

To illustrate, there are 107 twos in an ounce of shot and but 63 BB's. A goose will often get through the

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center of a pattern of BB's from a full choke gun where the twos would bring him down.

In the battery where we depend upon decoying birds and usually get a larger percentage of our chances close in, I use the modified medium-weight gun loaded with sixes. Sitting up to shoot from a cramped position, one can get on his birds much more easily with the light gun. I have found that in battery shooting it is not so much a question of reaching out to the birds as it is of refraining from shooting too quickly when they are on top of the box with their feet dropped and wings set to pitch in.

Sometimes, however, when the shots are few and I want to take advantage of every opportunity I will switch to the Magnum. The light may be wrong and the box show up distinctly, despite the iron we put upon it, and flare the birds at long range. Sometimes we are rigged where many birds are trading by, but on the wrong kind of bottom, where they will not feed. When they come cautiously near to look us over, yet not quite near enough, the big gun counts.

For marsh shooting, either by jumping the birds or with decoys rigged in a salt pond where the shooting is at black duck, teal, mallard and an occasional sprig, I prefer a medium weight twelve bore full choke loaded with $7\frac{1}{2}$. These soft feathered birds can be killed with small shot and though they often give long shots, the density of the pellets increases the chance of a hit in the



THE NEW REMINGTON SPORTSMAN MODEL SHOTGUN
A GOOD 12 BORE THREE SHOT REPEATER FOR DUCKS
A Splendid Example of the Highest Quality British Game Gun
Produced by R. G. Owen for the Author

DUCK GUNS AND DUCK LOADS

head or neck, which are the hits which bring down the most dead ducks and the fewest cripples.

I hear from a good many sportsmen seeking advice as to how to reach the birds in their locality where reaching for them is the only way to get them. Sometimes it is point shooting near some popular wildfowlers' resort where the birds fly wide; more often it is for the acne of all wildfowling, pass shooting at birds in full flight.

The gun for such work is the Magnum twelve as described heretofore, with three-inch cases and either fives or fours chilled; but it need not weigh over eight pounds. Tell the maker you know better; long shots call for long leads. To be sure, your gun swings less with increased range; but that is why the fast swing bird gun or the twenty will often cause trouble with decoying ducks when they come just right and when they are dropped in the water at fifteen to twenty yards. But this will happen only once or twice in several years' gunning.

If you are one of those who want one gun for all kinds of wildfowling—and the one-gun idea has its advantage, for the one-gun man is often a skilful performer—let it be a twelve bore repeater of some kind, sixty percent choke, weighing $7\frac{1}{2}$ pounds loaded with No. 5 shot. Shooting the country over from coast to coast, Great Lakes to Gulf, under all conditions, this gun will net the greatest number of birds in the long run. Do not overdo either shot size or choke, unless you are an expert.



CHAPTER TWELVE

The Upland Shotgun

IN SELECTING a shotgun for upland game, there are two general types to be considered—the double and the hand operated or automatic repeater. Despite the fact that great improvements have been made in the latter during the last few years, the old reliable double seems to hold its own.

To the novice it would appear that the additional magazine capacity of the repeater is a great advantage yet actually this advantage becomes effective only in the hands of an extremely capable marksman, and he is the one who needs it least in these days of short seasons and reduced bag limits. The expert shot who would burn up five shells at a rise to secure his limit as quickly as possible is but ruining his own day's sport.

If one wanted to get home more quickly, he could shoot his quail, doves or snipe in the open more easily with the repeater, but the man who habitually hunts for grouse, woodcock, and other forms of game in cover seldom has a chance to use to advantage more than two shots on a rise. Then again, there is a steadily growing antagonism among the better class of sportsmen to large

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magazine capacity, which is being encouraged by the firearm manufacturers. They have recently brought out new models of their pumps and automatics with the gun's capacity cut down to three shots—holding one in the chamber and two in the magazine and I would not be surprised if within a few years they discontinued entirely the five and six models. So much for speed of fire.

On the other hand, the average man can fire two shots from a double gun with far greater speed and smoothness than he can from a repeater. The double barrel is infinitely smoother in operation and better in balance and appearance.

I would say the two principal factors today in favor of the repeater are its single sighting plane, which many quite rightly consider promotes somewhat better accuracy, and the fact that for the money one can get a gun which is decidedly stronger mechanically and will unquestionably last longer. This has a tremendous attraction to the mind of the average American sportsman, who is not a wealthy man and buys his gun solely as a means to an end.

On the other hand the double gun, besides its beauty, smoothness of operation and superior balance, has an additional card in its favor which to my mind far outweighs the attractions of the repeaters. This is selective boring.

When one has a two barrel gun with one improved cylinder bored to throw its charge with a wide dispersion

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for the average shot at short range, and the other choked to throw a narrow pattern that will kill at long range, he is prepared for any occasion which may arise.

Though the owner of a repeater may have two barrels which are interchangeable—one for close shooting and the other for long range, he never has them both with him in the course of a day's hunting, and consequently, every time he goes out he is apt to be handicapped at some time or other. If he has his cylinder barrel he may get a couple of wide, rangey shots on which he fails to score or if he has his choke barrel, he is sure to miss or blow to pieces some birds at short range.

I believe that this one undeniable advantage of the double barrel gun, discounting entirely its traditional popularity, will preserve it for the future. Personally, I much prefer the double barrel gun.

We have, it is true, the Cutts Compensator and the Poly Choke—two appliances which can be attached to any single barrel shotgun. They are threaded to the muzzle and weigh only a few ounces. They are the only devices which permit the repeaters to be considered all-around weapons as with one or the other the gun can be changed in a few seconds from a full choke to a true cylinder or any desired intermediate stage. With the Poly Choke one need only twist it around to open or constrict the muzzle; with the Cutts Compensator the extra choke or half choke sections are carried in the pocket.

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But the few seconds required for the change will not permit one to alter the pattern and kill a long range bird which is already on the wing.

Surprising as the statement may seem, the high grade double has been in a state of perfection for over one hundred years. In the hands of that artist gunmaker, Joseph Manton, it became a finished product, just as beautiful, fast handling and deadly as it is today. The only improvement of any importance which the past century brought forth is the ease of loading with metallic ammunition.

The double is the thoroughbred—the gentleman's gun—and in the high strata of society it will continue to be the favored weapon until wing shooting gunnery is revolutionized by some at present unforeseen development.

I would personally recommend the repeater only when one's shooting is confined largely to a local condition on one class of game. For example, all through the south there are men who confine practically all of their shooting to quail over dogs in the open and ducks on some coastal marsh or river with an occasional shot on doves coming into a field to feed.

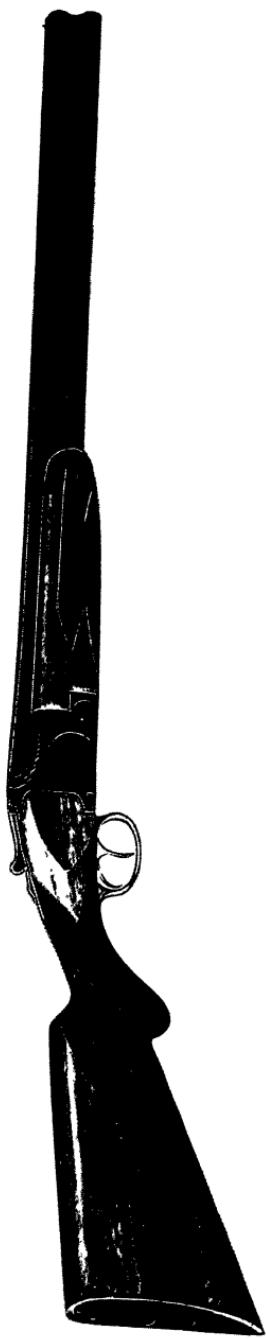
For the ducks and the fast flying and extremely wary doves, he requires a full choke barrel. For the little quail he never needs anything closer than a cylinder barrel with a light load of No. 8 or No. 9 shot. These different types

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of shooting, requiring a distinctly different pattern, very rarely cross each other the same day. In a like manner the western sportsman who only shoots ducks on the sloughs and passes and prairie chickens on the open stubble will find that he never needs anything but a full choke gun.

If those who do their shooting under these highly specialized conditions prefer the repeater, there is no argument against it, but for the sportsman like the average Easterner, who covers a wide territory and may hunt pheasants in the open one day, grouse and woodcock in the thickest cover the next, and possibly snipe on a bog the third—and who in the quest of one type of bird is constantly meeting the other, the double is the only suitable gun.

Appreciating the advantages of selective boring in the double and the single sighting plane of the repeater, there is one other solution of the problem. That is the Over and Under gun. This type of weapon had until recently never been produced in America, and in the past those who would own one had to dig deep into their pockets. We were at the mercy of a high protective tariff as they could be had only from abroad. Good guns in Europe are very expensive and the construction of the over and under made them still higher in price than the conventional double. In consequence, by the time a really reliable over and under reached this country from the



BRITISH OVER AND UNDER BOSS SHOTGUN
BROWNING OVER AND UNDER SHOTGUN

THE UPLAND SHOTGUN

hands of a Bond Street maker it cost in the neighborhood of twelve hundred dollars.

German Over and Unders could be had for three or four hundred but all of those with which I had any experience gave trouble sooner or later and would have been expensive at any price.

Shortly before his death the late John Browning designed a high grade over and under to be made in Belgium for distribution in this country by the firm which bears his name.

Being a semi-machine made gun, produced, as our American arms are, in large quantities, it was possible for the first time to market a really well finished weapon of this type at a moderate price, in the lowest grade. Having shot one for some time, I can heartily recommend it to those who have had unfortunate experiences with other Continental over and under guns.

Then came the Remington over and under, a plain and sturdy arm designed to meet the means of the average man. So we now have two excellent weapons of this type from which to choose.

From a mechanical point of view the over and under principle never can be as strong as the conventional type. When the barrels are bound together side by side in the same line of elevation, as they are in the common double gun, all of the working parts, though made left and right, are of the same weight and strength. In the

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over and under we have a far more difficult problem. With one barrel superimposed upon the other, the higher barrel exerts greater leverage upon its parts when the gun is opened. Certain parts must be made stronger to overcome this. Also many parts such as cocking rods, ejector rods, mainsprings, etc., are of different length. Yet all of these parts must work smoothly and some of them in unison.

Consequently, despite the greatest care in workmanship, the wear on the parts is not equal, and the best of the hand-made over and unders must occasionally be sent back to the factories for repairs and adjustment.

Let us consider the next factors of chief importance, weight and calibre. The twelve bore gun is still by a wide margin the most popular, with the sixteen holding its own and the twenty gaining on both. At present the small bore is on the crest of a wave of popularity, which has been augmented by the great improvement made in ammunition since the World War. Though I habitually use a twelve, I freely concede that the twenty bore is today fully up to every upland requirement in any part of the country. There was a time, not so long ago, when this was not so. The usual stock of twenty bore shells contained three-quarters or occasionally seven-eighths of an ounce of shot. Since the advent of the progressive type of smokeless powders which require a heavy load of shot

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to give the necessary burning pressure, the twenty bore charge has been increased to a full ounce.

With light loads the twenty showed too open a pattern, unless it was partly choked to give it the necessary effectiveness at the normal game shooting ranges. This was a severe handicap to the average man, whose marksmanship does not justify a close shooting gun for upland game. But when the pattern is thickened by the use of a full ounce of shot, the improved cylinder twenty will hold its own with either the sixteen or the light twelve at normal game shooting range, not to exceed thirty-five yards, and observation will disclose that the average upland game bird is killed at something like half that distance.

There is still much to be said, however, for the light twelve bore. Ammunition can always be secured for it in the most out-of-the-way places. There is little difference in weight between them because, while the twelve, for brush or upland shooting, should weigh not more than six and a half pounds, the twenty, to shoot comfortably a full ounce of shot, must weigh at least six or six and a quarter.

In favor of the twelve we find its more even distribution of the shot charge in the majority of cases. Because of its larger calibre, it does not mutilate the exterior pellets in the charge to the same extent as the narrower bore of the twenty, the shot column is not as long in the larger

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shell and the friction against the cone and choke is less. However, these are minor details and not serious arguments against the smaller bore.

There is little to be said about the sixteen. It is a delightful gun to shoot but as a rule the ammunition is not so well distributed as that of the twenty, and it has always seemed to me that as the gun is but slightly lighter than a twelve, and but little more powerful than the twenty, it was in a rather unhappy position between two, which were certain to be more popular.

As is always the case when opinions start in a new direction, we find a few radicals going still farther. The demonstrated ability of the twenty to meet all our upland needs has led many to trying out the .410 bore. Personally, I had no patience with the man who used these squib loads upon game. The little gun was suitable for bird collectors and for instructing the small boy, but the use, even on quail, of a load throwing but three-eighths of an ounce of shot leads to the needless crippling of so many birds that in the name of good sportsmanship the practice was condemned by all authorities.

Nevertheless, they persisted and the increased popularity of the .410 prompted the Winchester Company to bring out a three inch shell holding three-quarters of an ounce charge of shot and a pump gun similar to their Model 12 to handle it. While this monstrosity is equal in the weight of the shot charge to the light twenty bore

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loads, it should not be supposed that it is equally efficient. It is simply a freak and not built on sound ballistic principles. The shot column is so long that there is a very high percentage of deformed pellets. This has a bad effect upon pattern and to keep the pressure within the limits of safety, the velocity had to be decreased about one hundred feet per second so that it is a very slow load.

It is unfortunate that our sportsmen and manufacturers overlooked the twenty-eight bore, which is a much more serviceable weapon with the same charge.

I have done considerable shooting on rabbits and pheasants with a full choke twenty-eight bore, chambered for the two and three-quarter inch shell which throws a full three-quarters of an ounce of shot, and it is thrilling to watch how it will pull them down when it is held correctly. Of course, it must be full choke and, consequently, one must hold very close and allow correct leads. It is an expert's gun, but in the hands of one of that class, and with the long High Velocity shell, it will meet almost every upland requirement.

The most unfortunate thing the American gunner has to contend with is his ingrained preference for heavy guns, which has been encouraged by the gunmakers, as it is easier to make a strong but cheap heavy gun than an equally strong light one.

The sportsmen of this country have always been, for the most part, in moderate circumstances, and cannot af-

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ford to own many different guns. Furthermore, the amount of shooting which is left to them does not warrant it, hence the average requirement is for an all-around gun which can be used on everything from ducks and geese to jack-snipe.

They form the habit of using heavy loads in these ponderous weapons so that when a light weight twelve bore gun falls into their hands they naturally feed it the same fodder, and immediately condemn the light gun because it kicks so viciously. As a result our sportsmen are nineteen times out of twenty over-gunned and carrying around with them about a pound to a pound and a half more metal than is necessary.

It is largely this class which has popularized the twenty bore gun in America, simply because they do not know better. The twenties which they use are proportionally as overweight as their ponderous twelves, but, of course, are not as burdensome. Among the sportsmen with the opportunity to travel about and observe what the shooters of other countries are doing, and who have the means of buying high grade sporting guns, the light twelve is gaining in favor.

Much as I deplore making the statement, our gun-makers are so far behind in the building of high grade sporting shotguns, not only as regards design but also workmanship, that they can never hope to capture the home trade in first class weapons until they revolutionize

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their methods. Make no mistake—they make the best shotguns in the world for the average American who only asks for a strong durable tool. This type of buyer does not encourage our makers to better efforts, being unable to appreciate a first class gun when it is placed in his hands.

Anyone intending to spend less than three hundred and fifty dollars for a shotgun is making a great mistake if he buys a foreign one. He can get a more reliable gun at home for a hundred, though it will not look as attractive as one he could get from the other side for the higher price. This is particularly true if he is buying a gun from Germany, where some of the world's worst shotguns are built.

At the same time, there is no more comparison between the best which our makers are capable of turning out by their machine methods and the best of the hand-made British shotguns than there is between the reliable but cheap Ford and a Rolls Royce. The British shotgun stands supreme on just as unassailable a foundation as the American rifles and revolvers, in which we lead the world.

In my opinion the upland gun should be a double barrel, single trigger with automatic ejectors, the right barrel improved cylinder and the left modified choke (to make about a sixty percent pattern). The length of barrel is optional but I would suggest twenty-eight inches. Twenty-five inches is a fad on the continent for which great things

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are being said. They are handy and swing quickly, but it is my observation that, for the average man, they do not point as accurately as the longer barrels.

Whether the gun is a twelve or a twenty, I would advise this barrel length and boring, having in mind of course that the twenty would be made with two and three-quarter inch chambers for use with the full ounce loads; otherwise it should be bored some ten percent closer than a twelve. The twelve should weigh from six pounds eight to six pounds twelve ounces and the twenty, six pounds flat.

No gun can be considered modern today without automatic ejectors and while the single trigger is a matter of personal choice, it is pleasing to use and, like the ejector, has passed the experimental stage, so that one need have no misgivings as to its reliability if he selects the product of a dependable maker.

The early creators of breech loading shotguns no doubt followed as closely as they could the accepted design in muzzle loaders, and it naturally ensued that most of their efforts were of the conventional type. So, despite the fact that the box-frame, or Anson and Deely type was brought forth as early as 1876, among most sportsmen and almost all makers abroad, the sidelock has remained the standard of excellence.

While many claims are made for both types, some justified and others rather far fetched, both mechanisms have

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stood the test of time so well that I feel the choice is best left to individual preference.

Personally, I must admit a fondness for the sidelock. In the first place, all of the best guns in my battery are of this type, because in each instance they represent the finest work of the firms that produced them. I believe that opinion in favor of the sidelock is largely conventional; we are inclined to like the things which we are educated to think are the best. I feel also that it is, in most instances at least, the better looking of the two. It lends itself to more lavish adornment in so far as the engraving of the frame is concerned.

Makers of sidelock guns will tell you that the lock action is very much faster. I am inclined to doubt this statement. One of our own companies claims to have the fastest lock in the world, yet it is a box-frame gun with a coil mainspring. I believe these declarations of superiority are in both cases purely theoretical. I doubt if anyone could prove that one or the other had substantially the faster locking time.

The sidelock maker will also tell you that this type of gun makes the locks far more accessible for cleaning, inspection and repairs and, therefore, is decidedly the better type for one to take to places where he would be far away from a gunsmith.

Most men going to distant lands on a shooting trip do not take a best gun with them. They buy a rough-and-

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ready knock-about, which will withstand wear and not require a great deal of attention. But, for argument's sake, if they should want a gun which they could quickly dismount and clean themselves, they can very easily get an Anson and Deely with detachable locks which, if anything, are quicker to detach than the sidelocks and will be considerably stronger.

It is true that the average man who can afford a sidelock, or pair of sidelock guns, uses them on a preserve where he is in close proximity to the maker; and the man who pays the top price for a gun is the most apt to send it to the maker occasionally for proper cleaning.

The sidelock champion will tell you that it is the most expensive to produce. This is unquestionably true, but in itself is no assurance of superiority. He will scrupulously avoid the subject of strength and simplicity, knowing that ounce for ounce the box-frame gun is the most desirable because of its few and strong parts, and the manner in which it is put together. The sidelock gun has about three parts, of much frailer construction, for every one of the Anson and Deely action. Consequently, to make a durable gun of this type is a very much more expensive operation.

The maker will also, in most instances, suggest that sidelocks make a better balanced gun. Balance is not a matter that we can attribute to any particular action, because the action is, after all, only an integral part, though



AMERICAN GUN BY PARKER

DE LUXE WINCHESTER MODEL 12 REPEATING SHOTGUN
A Rare Example, Engraved and Stocked by Griffin and Howe

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an important part, of a gun. Balance depends upon the relationship of the stock, barrels and action. Without due consideration to each one of these vital components the gun cannot possibly be properly balanced.

On the other hand, the champion of the box-frame gun will admit, to begin with, that it is cheaper to produce. There is no question about that. One can get a better box-frame gun for the money involved. He can also secure a lighter gun with the same degree of strength. Practically every conscientious maker, when you want an excessively light gun, will recommend a box-frame, as the wood is not cut away nearly as much at the head as in the sidelock. In fact, in the sidelock variety there is very little timber left between the locks, and for this very reason, if for no other, in ordering a twenty gauge, I would most certainly urge the adoption of the box-frame type instead of the sidelock. If one should happen to fall with a sidelock twenty bore in his hands, he would be more apt to crack the stock at the grip than he would with the Anson and Deely type.

If, on the other hand, you are buying a duck gun for hard usage on salt water and you tell the maker you want the most powerful action that you can get to withstand heavy loads, I have found he will invariably recommend the box-frame.

Considering all this, why has the sidelock gun continued to be so popular? At the risk of arousing the ire

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of many of the world's best gunmakers, I will humbly suggest that it is because they, one and all, having an eye to business, appreciate the side on which their bread is buttered the thickest. So long as they continue to get half again as much for a best-grade sidelock gun, as for the same grade box-frame gun, they are going to foster the popularity of the sidelock. I consider it arrant nonsense for any gunsmith to suggest that this type is superior to the box-frame.

Many foreigners object to the top fastening or extension rib, as universally fitted to the Anson and Deely type of gun. It is used because the action is much shorter and the hinge joint is so much closer to the face of the breech that the makers deem this additional fastening necessary properly to lock the gun. By the extension of the distance between the hinge and the standing breech, this top fastening may be omitted.

A great deal is still being said about the strength and benefit of one kind of a top fastening or another. There are gunmakers that cling to the doll's head—the first successful form ever produced. There are others that insist on the round cross-bolt or the square cross-bolt. Others condemn any kind of a top fastening and still others declare that only the compensating rotary cross-bolt as used in America is of any value.

Undoubtedly, the American rotary cross-bolt binds the action to the frame more tightly and with less necessary

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adjustment than any other used today, but it has one very grave defect: no gun equipped with it is easy to open and close. When steel is grinding against steel with the friction created by a powerful spring, the gun will remain tight just as a closely fitted door will, and in the same way is not easy to open.

When all is said and done, there is no better top fastening than the old doll's head, but it is also a fact that unless they are most carefully fitted, none of them are any good. In the final analysis, if the gun is a high grade weapon and properly fitted throughout, there is no need for any form of top fastening. Their chief importance on high grade guns is in the sales talk they provide for the manufacturer. On lower grades they are an admission that the gun is not as carefully fitted as it should be.



CHAPTER THIRTEEN

How to Hit 'em With a Shotgun

I AM pleased with the selection of the title for this chapter, for it sounds the keynote of success. It seems at once to dismiss the thought of missing, and most certainly it is this attitude in which we should approach our shooting.

What should be hard about grassing any upland bird, be it quail, grouse or snipe, all of which are usually killed within twenty yards of the gun? I am not belittling the regularity with which a really expert wing shot will knock down his quarry. That takes a degree of coördination which we cannot all command. What I really mean is, that if we stop to consider what a charge of fine shot from an improved cylinder gun is like in flight, with few exceptions each individual bird should be easy to kill. To hit that same bird with the single ball of a rifle would be a difficult feat, but at twenty yards the improved cylinder shot column is twenty-five inches in diameter. If we could see the charge in flight, shooting a shotgun would be almost as easy as squirting a garden hose at a flower bed.

Why, then, do we miss so often when we should hit? I

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believe, for one thing, it is because we are too willing to admit the difficulty of hitting; we allow the bird which roars up at our feet to bluff us out of it. Lack of confidence causes us to shoot wildly without due regard to time, pace, stance or the line of flight.

When you are without a gun do you ever see a game bird flush which would be hard to hit? You take your dog out for exercise in the closed season and flush one or several grouse. They seem to flap away like crows. You say to yourself, "If I had had a gun, those birds would have been my meat." Why don't we ever get a shot like that in October? The fact of the matter is, we get many such shots without realizing it.

Some will say the birds are wiser; they know when the season is open and become wilder. Sheer nonsense! It is the shooter who is wilder. Sometimes we shoot too high, sometimes too low, or perhaps we are too far behind or in front. Many a man misses consistently by being too far forward, because older gunners have dinned into his ears that when he missed a flying bird he had shot behind his mark.

There are a host of reasons for missing, but the most important are lack of nerve control, intelligent application and observation. Because we cannot see the charge in flight, the misdirection of the load is not made glaringly apparent to us.

Who ever heard of a golfer who did not begin by

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taking lessons from a professional? Good swimmers and tennis players do the same thing, but no one ever hears of a shooting man doing so in this country. We take our shooting too casually. The average man is self-taught, and never takes a practice shot before he goes on a hunting trip. Yet, though we see many perfectly atrocious marks-men hunting game birds, we also see a great many who are astoundingly expert considering their methods, which goes to prove my contention that shooting is not as difficult as many other sports.

The only trouble with the title of this article, "How to Hit 'Em," is that it implies that I can tell you how. No one can do this. There is no royal road to proficiency in shooting; each man must work out his own problems. Though I advocate an instructor, he cannot show you where to shoot or how to hit. The most to expect from him is advice on what not to do. He can correct your stance, and can make a shrewd guess as to why you have missed; but he can tell you only in a general way where to hold for any given shot.

A great deal of dogmatic advice on the subject of shooting has been handed down from father to son, which we could well dismiss from mind. Take, for example, the charts which are periodically published showing the exact allowance necessary to hit a passing bird. These charts have been worked out with meticulous care for every combination of shot and powder in general use

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today. They have been prepared for every range from ten yards to the limit of a shotgun's killing power, but other than for a comparison of the velocity of various sizes of shot, they are not worth the paper they are printed upon.

It is absurd for one to attempt to tell another where to hold or how far ahead to swing. One man's reactions are quick, and another man's are slow; one man has a very active brain but his trigger finger does not respond rapidly to its command. While one man swings slowly with his game, another swings rapidly past it. In consequence, where one individual will require a lead of many feet, another will shoot equally well with no appreciable lead.

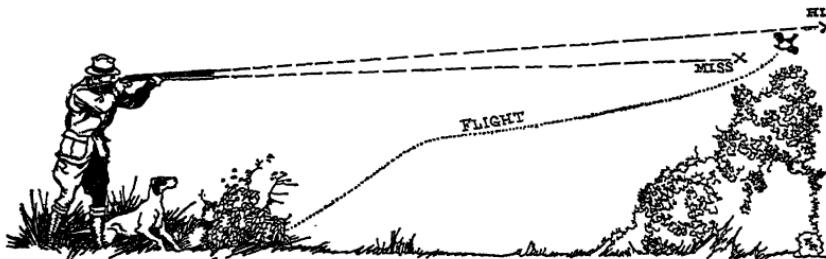
We do know that you cannot hit a bird by shooting behind it. Whether or not you think you lead, every time you hit you positively do lead. The average man is inclined to believe that he leads much less than he actually does. The front sight on a twelve bore shotgun covers a good six inches at forty yards, and a gun barrel twenty-eight inches long, better than a foot. The width of the muzzles on a twelve bore double gun covers better than three feet at forty yards. Very frequently the man who says that he led six inches has led nearer three feet without realizing it. Hence no man's advice can be taken on the subject of lead.

For this reason you must be observing. When you hit a bird at a certain angle, you must remember where you held. Though every bird that you shoot at tomorrow may

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be slightly different from those which you see today, the variation is not great enough to put it out of the generous pattern of your gun if you hold approximately right.

The most I can hope to do for my readers is to point out why we make many common misses in the field and on wildfowl. Take, for instance, bob-white. Almost everybody who has handled a gun in the upland has had some experience with him, because of all our native game birds, he is the most widely distributed. When flushed, the average quail rises close to the shooter and goes straight away, above the level of the eyes. Though the novice would expect such a shot to be the easiest, most experienced gunners consider such a bird the most difficult to hit. A quartering shot or an abrupt right angle is far easier. Old heads know by experience where to hold and snap quickly in front of crossing birds; but when the bird is going straight away, unless it is rising abruptly, it is increasing the distance between itself and the gun very rapidly. The mark is smaller than when it was flying

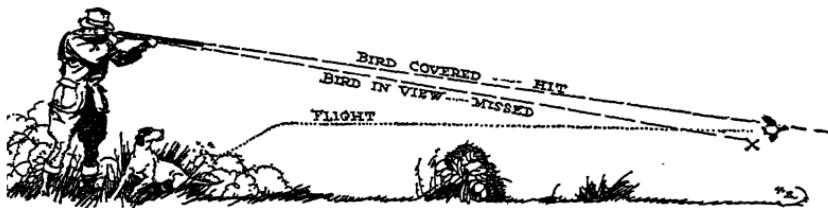


across the gun, and in consequence the shooter is very apt not to observe just what it is doing.

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Let us say the bird goes straight away from the gun on a level with the eyes. In front of it is a little bit of cover or a hedgerow. The bird will invariably rise to pass over it, yet the rise will be gradual and not apparent to the eye. To hit this bird we have always been told that the shooter must cover it up, but this depends, of course, upon the fit of the gun. Practically all of the old books tell us to hold high, to cover up our game, but our fore-fathers invariably shot guns with much more crooked stocks than ours.

I believe I am fairly safe in saying that two generations ago the average shotgun had three and one-half to four inches pitch down at the muzzle and a drop at heel of about three inches. The average today would be much nearer a two inch pitch down at the muzzle and a two and one-half inch drop at heel. This is as it should be. As a result, one does not have to hold above the mark and cover it up on a straightaway shot. Our straighter guns shoot about six inches to a foot high at forty yards and make automatically the necessary allowance.



Now let us consider the quail that gets up and goes straight away or quartering below the line of sight. Nine

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times out of ten the shooter will throw up his gun, snap on to the bird and, with it plainly in sight, pull the trigger. Yet if he will observe the illustration covering this condition, he will see that to lead the bird he quite obviously must cover it; and whether it is going away, flying at right angles or coming in, it must be led.

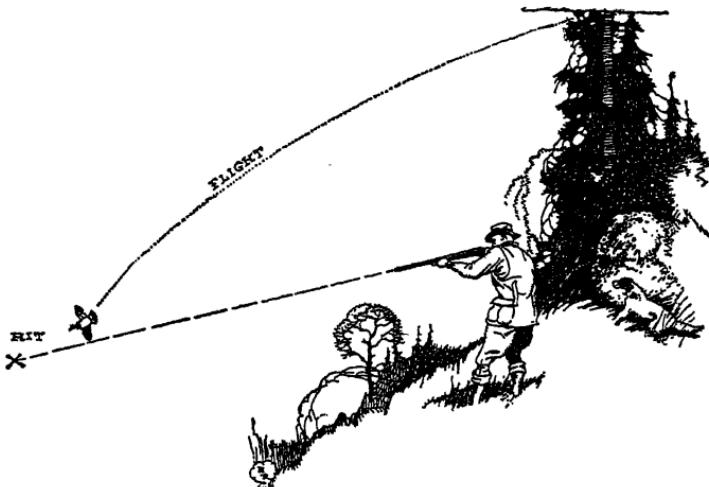
Most of us forget our lead on the incoming and outgoing birds. When I was a boy, shooting partridge in northern New York, I found that the average bird which roared up from my feet and went tearing away, high through the hardwoods, did not present a difficult shot. This shot is always the easiest for the beginner because he is inclined to shoot wildly, without putting his face down to his gun stock, and by accident shoots high; but the same man will very seldom kill a low-flying quail, because he does the identical thing and over-shoots.

Another difficult ruffed grouse shot is a bird which pitches into a tree and skulks there until you are almost under it, then, swooping down, goes away, close to the ground. Although this is also a low shot, it is almost impossible to shoot too far under the bird. One cannot seem to depress the muzzle fast enough to lead his mark sufficiently.

Today grouse seldom sit in an old pine top until we are up to them, as they used to; so we do not get many such shots. But we frequently get a similar one on a side hill when a bird, getting up above us, crosses our front,

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going down-hill. I find that I must shoot what appears to be three or four feet ahead and fully half as much below such a bird to hit it, and presume that what appears to me to be three or four feet is nearer five or six.



You will note that the low-flying quail that went away over level ground requires entirely different holding than the grouse swooping down-hill or out of the tree, yet they are all downward shots. To get in front of the low-flying quail we must cover him up, and if the low-flying grouse is going straight away, we have to cover him up to hit; but when either is dropping abruptly on a steep side hill, he is going down so much more rapidly that to hit we have to be underneath the mark as well as out in front of it.

A few seasons ago I was shooting in northwestern Saskatchewan at what has always appeared to me to be

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the fastest flyer of them all, the Hungarian partridge. It took some time to get the swing of it. The birds have a trick of flushing about twenty or twenty-five yards from the gun, which one does not expect, and they go away like a bullet. It required long range snap-shooting to kill them, though this could be done with a fair degree of regularity once one became used to it.

A few days afterward the season opened on prairie chicken, the big, fluffy-legged sharp-tailed grouse, and we went out for them. To my utter disgust, in the first couple of hours I missed bird after bird that went up in front of me and hovered like owls. They seemed almost to stand still, looking like toy balloons. Yet I fired a half dozen times before I connected, and then suddenly realized that my timing was keyed up for the swift little Hungarian. In all probability I was shooting right over the top or far in front of the chickens.

Jack-snipe are universally conceded to be the hardest birds of all to kill, yet to some men they are easy. I am fortunate enough to count myself in this class. At no time since I was a small boy have I found them a difficult mark.

Some old-timers will tell you to wait until the jack-snipe has finished his zigzagging and straightened out, and then coolly drop him. My observation is that a snipe may make one zig and no zags, or he may make about thirty zags and never zig until he is out of sight. The only

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way to shoot him is to key yourself up to the point where you are trying to pull the trigger before he says "scaipe" the second time. I have never yet seen one on the ground when hunting them, but my mental attitude toward him is that I want to shoot him the minute he spreads his tail to take off. As a general rule it is safe to say you cannot shoot too quickly on jack-snipe if you want to be a consistent performer.

Of all the birds that fly, probably the most disconcerting is the woodcock. He has taken more conceit out of American wing shots than any other bird. You may go out and shoot six woodcock straight, and come home and say to yourself: "I am the cat's whiskers. They simply don't come any better than I am." In complete confidence you shoot the same way for two or three days, but all the time you are heading for a fall. The day will come when you will put up a woodcock, and if you persistently follow him you will shoot up every shell in your gunning coat and go home without him.

A man very seldom performs indifferently on cock. He generally shoots about up to his top form, or he is too poor at it to be good company. Like all other game birds, the woodcock is generally either quartering or going straight away. It almost never goes low. Its game is to hustle quickly into the air until it reaches the top of the cover and then go away with a deceiving flight which does not appear rapid.

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The average man, until he is used to woodcock, will get on it just about the time it hits the top of its flight, and if he is still swinging up with his bird as it straightens out above the cover, he is liable to shoot over it. What he should do is snap on to the bird when it is still rising. Waiting for the woodcock to straighten out after it reaches the top of the rise is like waiting until the snipe stops zigzagging. You just don't know when it is going to stop rising, and just about the time it gets ready to do so it may see a convenient tree-top to flash behind as quickly as you could bat an eye.

In my opinion, the only way to shoot grouse, snipe and woodcock, is to do it faster than you know how and still keep on trying to be faster. But this does not mean blindly letting off a cartridge. Always shoot with the greatest speed you can attain, but be conscious of an attempt to get on to your game.

The same thing applies to quail shooting in cover, and a great deal of it is becoming cover shooting, as the little bird is taking on a new strategy of self-protection and stays out a shorter time to feed where it is gunned hard. The good shot in the quail field, however, is the man who can shoot with deliberation. There is all the difference in the world between shooting quickly and shooting hurriedly. The quail shot who cannot overcome the impulse to hurry can shoot for fifty years and never improve.

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Ducks must be handled in the same way. Duck shooting affords a good many shots that we do not find in the upland. We more frequently get an incomer. Ducks over decoys, whether they are incoming, going away or crossing, simply should not be missed. The man who does not hit three out of five has no claim to be called a fair shot—but in view of the conditions under which waterfowl are hunted, with the possible exception of certain types of decoy shooting, duck shooting requires considerable skill.

To the beginner, the hardest shot of all is the high, straight incomer, more frequently had on a pass, or fly-way, as it is sometimes called, where you wait for the birds to come over. Lack of success in shooting at such a mark is due to two things: in the first place one does not shoot soon enough and lets his bird get too close; in the second place, he fails to lead sufficiently. The distance you shoot in front of a duck is much greater at forty yards than it is at twenty, though this additional lead is no more apparent.

Quite obviously, if you can see your duck over your muzzle when you shoot, the charge is going behind his tail. You must cover him up. If you wait until the duck is almost overhead, where you can accurately judge your lead, he is very much closer and you have a less generous pattern to depend upon for your hit. And if you miss with the first barrel, you are obliged to take a high going-away

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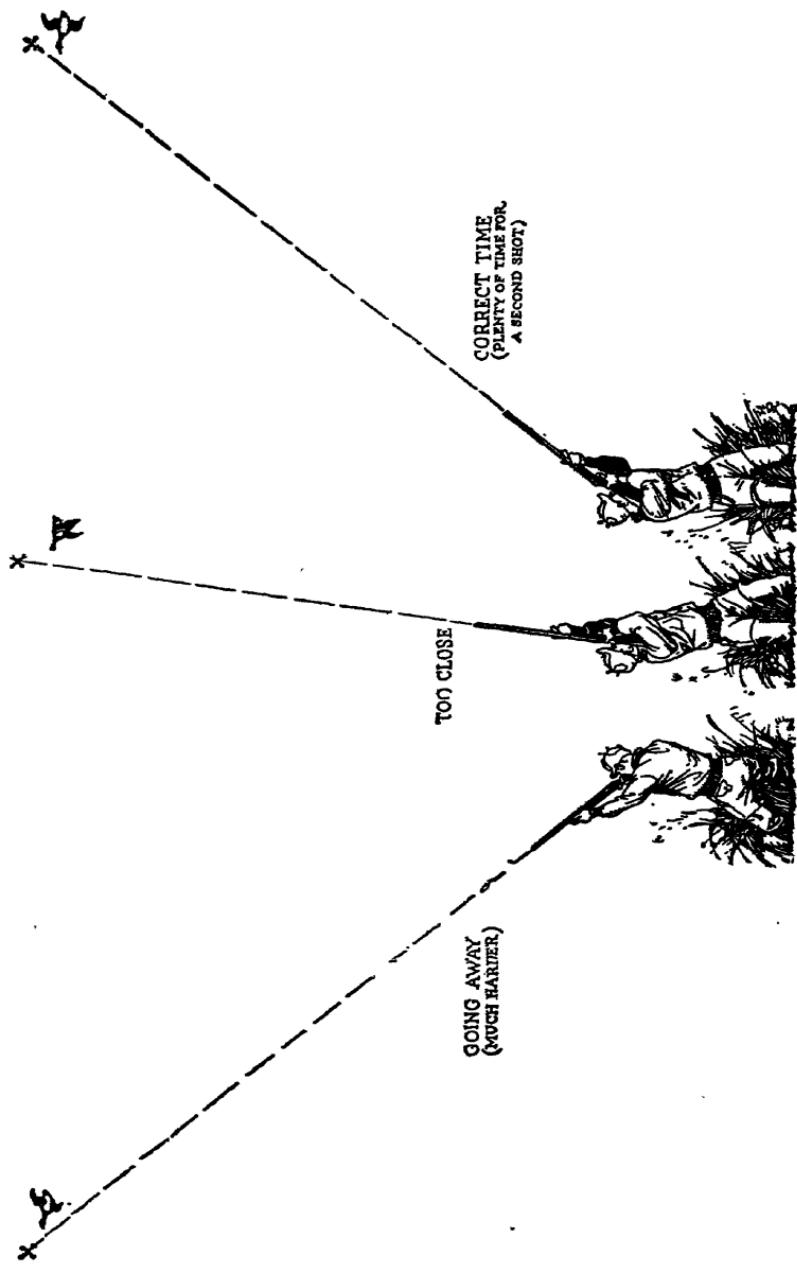
shot to the rear, which is probably the most difficult of all. Whereas if you get on your incoming bird well out in front, you have a wide dispersion to intercept him and need not swing so far ahead. If you take a thirty-yard-high incomer about twenty-five yards out in front, you have only to point your gun at him and snap ahead enough to cover him up.

In common with many other hunters, I have been in the habit of riding in with my incomer. That is, I would get on him well in front and swing with him until he was almost overhead. When I missed, I had to take that difficult, high, going-away shot to the rear with the second barrel, and usually scored a double miss.

Some years ago while shooting on the estate of a generous friend in a big pheasant drive, I learned in a half hour more about incoming birds than I had ever known before. One of my stations was out in the middle of a field. Seeing me as they left the edge of the woods, the birds would swing to the left, down-hill toward the next gun, who was well concealed.

To kill any of these pheasants I had to take them about thirty yards in front of me, as they were coming straight on over the tops of the trees, and I killed with such regularity that those in the next butt received very few shots. All the rest of the day I continued, no matter where I was standing, to take my first bird well in front, and I found that I had an added advantage—I still had ample time

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to kill another bird with my second barrel before it had passed behind me.

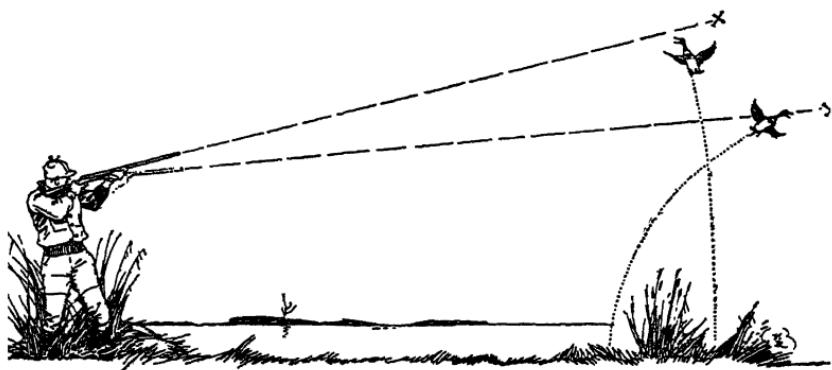
I just mentioned the difficulty of taking a high, going-away shot. If such a bird, as shown in the chart on preceding page, is going away fast at about a twenty-yard height, one has to shoot considerably under him to get the shot charge in front. As the dotted line indicates, if the gunner held on his bird, the charge would pass behind it. As we swing a gun up to connect with our mark, we are very apt to check the rise of the barrels too soon. We therefore shoot too far under the bird, or much too far in front of him. There should be noticeable daylight between the muzzle and the bird, but if this is excessive, we will overlead.

Another very difficult shot frequently encountered by the duck shooter is the fowl that comes up high, in an inquiring way, and then trails off and goes back. Pintails and gadwalls are particular offenders in this respect. If you wait until the bird has turned completely around, it has made a considerable arc which has probably taken it out of range. It is also well to remember that such a bird, as it gets farther off, appears to be coming down, but is actually almost invariably rising. Whenever a duck turns back, he is frightened and climbs. No game bird comes to ground when frightened unless he is attacked from above by a hawk. As a result, one must take this curving shot by shooting well above and in front of it. It is hard

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to do two things at once, which is why we so frequently miss it.

Jumping ducks, such as mallards or black ducks flushed from a marsh, though very difficult at first, become quite easy when one gets the knack of the shot. The only reason



we miss them is because, as I said earlier in this chapter, they bluff us out of it. We are too anxious; we are afraid. Quite naturally, when a bird has the strength to rise twenty feet into the air from water with one flap of its wings, as a mallard can, it rises quickly. You must shoot over its head to kill it. But you also must be a little in front of it because it does not go straight up.

In my opinion, when shot over a pointing dog, nine times out of ten the pheasant is not worthy of mention as a sporting target, though occasionally the odd bird will present a difficult shot by running until almost out of range. It is only when he is driven by beaters over the

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guns in quantities at high speed and lofty altitude that he becomes a really difficult quarry.

There are, we might say, two schools of practice in game shooting,—the old method of aiming and the advanced school of gun pointing.

The old school, which we all know, as almost everyone started with it, taught one to creep before he could walk, by carefully aiming at his bird down the rib of his gun, making due allowance for necessary lead.

This action may vary between a slow deliberate aim and swing on a tall duck, to a half snap, half swing, on a quail or grouse; or a quick snap as the gun is tossed to the shoulder to intercept a vanishing woodcock in cover. Of course, the more proficient one becomes, the faster he is on all shots.

Europeans who shoot over dogs, for the most part still shoot this way.

The advanced school is, strictly speaking, a product of driven game shooting and in my opinion it can be followed with general satisfaction only under such conditions as the drive provides.

In brief, this school advances the theory and puts it into practice with astounding results, that one should not actually aim with his gun. The weapon should be properly fitted to the shooter by an expert, having due regard to his physical development. Then he is rigidly schooled, just as a golfer is by a professional, in the proper mount-

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ing of his gun to his shoulder, stance, pace, and the proper angle at which to take incoming birds.

He is cautioned against being conscious of his gun muzzle. Everything else being as it should be, he should merely have to look at his bird with both eyes and let his left hand direct the aim automatically to the point where the gun muzzle should be at the moment of discharge. It is argued that we instinctively point accurately at an object with either hand, without squinting down the finger. Consequently, if the gun fits, and one's form is correct, there is no need to squint down the barrel. All one needs to make a creditable performance is a knowledge of pace and a keen appreciation of range plus some proper instruction.

So far as I see the only trouble with this argument is that our fingers were given to us, but we made our own guns, hence the former are synchronized to our bodies, while the gunmakers were unable to do this with their weapons.

The exponents of this school of fire are, broadly speaking, men who do most or all of their shooting at driven game, and the makers of high class guns who cater to this clientele and build most of the products of their shops for that purpose.

It is quite within the realm of reason that they are prejudiced in favor of a style of shooting eminently suited to the conditions involved, which would not at all meet

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the needs of the shooter of wild game in America or elsewhere.

When one stands on the smooth level ground of a butt or a ride cut through the woods—his body erect and well poised, he is on the alert for game which in most instances will be in view and give ample warning of its approach before it is in range. With the second gun ready to be placed in his outstretched hand by the capable loader behind him, it is quite easy to maintain perfect form and uniformity of shooting.

Furthermore, the guns are invariably cylinder bores, the birds are at moderate range and coming over in a uniform direction, so that a high degree of accuracy is not essential. In fact, as the shooting may be fast and furious for a few minutes, moderate accuracy with high speed is of greater importance to one's host. He would far rather see one of his guns burn up fifty shells and kill thirty birds, than use only ten and go straight, if in his effort to shoot with deadly effect his deliberation has caused him to pass up other good chances.

The wild game shooter who is walking the side hills for grouse, climbing through brambles and briars after quail that have gone to cover, jumping bogs in search of the wily jack-snipe, would soon learn better than to apply this school of fire to his ever varying conditions. We flush our game unawares. A bird will roar up in back of you, or go overhead just as you are leaning over a fence, slip-

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ping on a muddy bank, or stumbling over a tussock. In rough shooting, nine times out of ten you are off stance on the most uneven ground when a shot is presented.

In most instances, one will apparently just point and shoot; if he tries to poke on to a bird in cover, he will seldom connect.

Upon other occasions, one would fare badly indeed if he did not aim with deliberate intent, particularly if his body was twisted in a knot in an effort to get on to his elusive quarry, with a low-hanging bough in the way. The man who has never shot anything but driven game would say, "But one should not shoot off stance." True enough for him, but the hunter of wild game knows better. He has to take his chances as they are offered.

I know that, when duck shooting at long range and on high pheasants, I constantly dwell on my lead, barrel alignment and the pace of my swing. Such shots require accuracy, quite different from the shooting of woodcock or partridge, which is usually killed under twenty yards from the gun.

Trap-shooting requires accuracy. Who ever heard of a good pigeon shot who did not aim? Perhaps that is one of the reasons why our clay target experts so far excel those of Europe.

The really good shot is not tied down by any system or prescribed rule. He can shoot deliberately, or he can wheel and snap onto his bird like a flash when the occa-

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sion demands. His pace is varied to suit the needs of the moment.

But quite frequently he does not realize it. Taking two good performers at random, one might tell you that he shoots deliberately and the other will say he is solely a snap shot. If you watch them both in action, you will see a change of pace of which they are not aware, a dozen times in a day. The rarest thing among shooting men is one who is a good judge of his own method and style; very few can tell you how they shoot.

In my opinion exponents of the pointing system who think that they apply it to rough shooting are laboring under a delusion. They believe they are not aiming, while actually what they are doing is aiming and shooting so rapidly, that they are not aware of it. Long practice has made this action second nature.

I have known several great exhibition rifle and pistol shots who performed remarkable feats upon aerial targets —one and all said that they aimed each shot deliberately, but that constant practice had speeded them up so that it appeared to be instantaneous.

The defender of the pointing method is quite apt to cite other sports as examples of the principle; among the favorites are billiards, golf, archery, polo and tennis.

The polo and tennis experts are quite easily disposed of; the degree of accuracy required to place a ball in the corner of a court, or to shoot a goal from thirty yards,

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is in no way comparable with that required to kill a pheasant at forty yards.

The archer most certainly does aim; so do the golfer and the billiard player. True, they don't line up their instrument with the eye, but nevertheless they aim indirectly, and what is the result? They cannot even make fair practice at one-quarter of the speed constantly required of the shooter.

Watch the billiard player size up his shot. How many ducks would a man kill on a pass in that fashion?

Did you ever watch a golf championship? The same thing applies there.

The archer must perforce shoot in the manner prescribed by the pointing school. He aims with the greatest deliberation, using the indirect method, yet the expert archers, in point of accuracy and speed of fire, are not in the same class with the most mediocre rifle shots at short range. Direct aim with a gun, I believe, is responsible for our accuracy, though I am free to admit that on the average shot we are not conscious of the effort.

If there is any deduction to be made from these random remarks on how to hit them, I imagine it is that the keynote of success is confidence gained through realization of one's increasing skill. Once a man gets to the point at which he knows where he should shoot and has sufficient control of himself to shoot there and not just blindly let off cartridge after cartridge, he should easily be able to

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increase his speed. The biggest drawback in attempting this is, of course, trying to hurry. Hurrying is fatal to any form of shooting—I might say, to any form of sport in which I have ever participated. Speed gained with full consciousness of ability to do what one wants to do is the key-note of expert shooting. The faster one shoots, the less chance he has of making a mistake in judgment, for the nearer the bird is to him the less allowance he has to make in any direction. The more quickly he shoots and the nearer his game is to him, the nearer he can shoot to his mark with the hope of hitting.



CHAPTER FOURTEEN

Fitting the Shotgun

THERE are three cardinal reasons why the average sportsman is not a better game shot. His gun is too heavy and crooked and it shoots too close. As proof of this, I maintain that the more shooting experience a man gains, the lighter, straighter and more open bored his guns become.

The introduction of heavy progressive powder loads brought about a new condition in American gunnery which caused our manufacturers no little trouble.

The fact that such charges are entirely excessive for ninety percent of our upland shooting, and unsuited for use in the average gun built for that purpose, does not deter the hyperenthusiastic nimrod from using them in the hope of killing one more quail or rabbit.

I have observed that in most instances they are used by those sportsmen who shoot a couple of hundred shells a year and who, because of their lack of practice, and ill-fitting or antiquated weapons, can least stand the strain of their pounding. The owner develops a bad flinch and cannot hit a flock of barns. All of which should be ex-

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pected, if one buys a six and a half pound twelve bore, with two and five-eighths inch chambers, and a stock which is an inch too short and a full inch too crooked (as is usually the case in a gun bought over the counter), then crams into it two and three-quarter inch shells loaded with a full one and one-quarter ounce of shot and an equivalent of three and three-quarter drams of Smokeless. The short chamber with the long shell in it will give extra recoil, not to speak of increased pressure, without the aid of the heavy charge. But, of course, the shooter cannot be expected to know all that and he condemns a good shell or a good gun or both, because of an unhappy combination.

Nevertheless, I do not favor heavy guns. One can hit just as wide of the mark in the opposite direction. And I maintain that there are more excessively heavy guns being used with moderate loads than there are light guns with excessive loads. A great many of our guns are entirely too cumbersome now for the use for which they are purchased.

I thoroughly believe in light guns. When I say light I mean normal, twelve bore guns, for the field, of about six and three-quarter to seven pounds weight with ejectors, and chambered for two and three-quarter inch cases. My favorite pair, with which I have done all my shooting for the past five years from snipe and quail to ducks and geese, weigh six pounds fourteen ounces each.

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Provided it fits and only standard field loads are used, there is no reason why the average sportsman cannot use such a gun comfortably for upland shooting, particularly if he indulges in a moderate amount of practice throughout the year at clay targets. He could not be expected to shoot the same gun with heavy duck loads for wildfowl unless he was immune to recoil or hardened to it by constant shooting. But assuming that he uses his light gun only for upland shooting with the right kind of loads, is it not better to accept a little more punishment on the shoulder and less at the end of the day through the burden of a heavy gun?

With the bag reduced in the most liberal states to thirty quail, why use a cannon? One is a poor performer indeed who cannot bag his limit (providing the birds are there to be killed) without shooting himself into a state of collapse through recoil.

Other species of game are allowed in far smaller numbers—three pheasants, four woodcock, three grouse, six rabbits. We do need strong charges sometimes for our rough shooting. What is left of our game has considerable ability to fend for itself, but when we often walk an hour or more between shots, why carry a heavy gun? Surely it is more reasonable to suffer a few mild jolts.

To show the general serviceability of a strong-shooting, light gun, I cannot do better than cite my own experience.

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In one year I shot in three field trial events, using my favorite, under seven pounds weight, and although I do not normally recommend heavy loads for field shooting, one gets long shots on pheasants in a trial over Springer Spaniels; so I used one of the high speed Oval loads and a full ounce and a quarter of Sixes. At Fisher's Island I grassed sixty odd birds in two and one-half days. Altogether I killed about one hundred and fifty pheasants with this light gun and heavy load, and never at any time felt the slightest discomfort from the combination.

I have made the statement that as a shooting man gains years and experience, his shotguns become lighter, more open bored and straighter in the stock. I remember well the first gun I bought for myself as a boy. There were several fine guns in the house at my disposal, but this was my own gun, paid for with hard-earned dollars. As I look back on it and recall some of the days that we had together, I believe that, despite its three and one-quarter inch drop and fourteen and one-quarter inch stock, I shot the gun very well for a boy.

For a long time I felt that I could not use a straighter gun, and though I purchased some, I discarded every one without giving myself a chance to become adapted to the change. Little by little, however, my guns became longer and straighter until today I use a two and five-eighths inch drop and a stock fifteen inches in length, and as my guns

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became straighter, I found that I learned to shoot straighter.

The question probably arises in your mind what stock a man needs. There are, of course, circumstances to be considered. One man may have a thick jowl and need a thin comb to prevent his cross-firing; another man with a long angular thin face requires a thick comb to keep him from cross-firing in the opposite direction; a broad shouldered man needs a cast-off to bring the center of the rib well over in line with his eye, yet another man's shooting would be ruined by the use of a cast-off or a decided bend in the stock. I occasionally hear from a tall man who has unusually short arms. The very fact that his arms are short would be sufficient reason for a short stock, though his height would indicate that he required a long one. On the other hand, some little fellow might, monkey-like, have long arms and really need a long stock for comfortable shooting.

These things must be taken into consideration and are fully as important as length and drop.

Assuming that the average chap is about five feet eight to five feet nine and built in proportion, I would recommend, as a general rule, a drop of two and one-half inches at heel by one and one-half at comb with a length of fourteen and one-quarter inches. Shorter men are usually deep chested and two and one-quarter inches drop would be ample, and thirteen and three-quarter inches sufficient

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length. The man of about five feet eleven to six feet in height requires approximately a two and three-quarter inch drop at heel by fourteen and three-quarter inches in length.

The figures are based on the general average of men whom I have satisfactorily fitted. I am referring not to special trap guns but to the average all-around gun. Duck guns for the northern shooter, who gets most of his wild-fowling in severe weather requiring heavy clothing, can be slightly shorter in length, but the drop should remain the same.

Trap-shooting, which is a special game, requires a special tool. Nevertheless, as a man gains shooting experience and coolness in the face of game, he may find it to his advantage to use a straighter and even slightly longer gun; but it also must be admitted that until beginners learn the rudiments of good shooting they very frequently require abnormal drop and short stocks.

If you were to place a very straight gun in the hands of an absolute novice who hardly knew one end of a gun from the other, he would have great difficulty in bending himself around the stock and getting his face down to the comb. A clumsy, crooked stock with about three and one-half inches drop would appear to fit him very much better, and as a matter of fact, in the beginning he would shoot much more successfully with it, but as a man gains experience, he usually acquires coolness and precision,

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and a certain style in tossing his gun to the shoulder. He will usually place the butt uniformly on the shoulder, and it is not until he has reached this stage that one can really do anything serious in the way of fitting him properly. The longer he shoots the more precise he will become in placing his gun properly, and I might add that until he does become precise, he will never become a good shot.

One of the greatest difficulties is to fit the chap who has formed certain bad habits of which he is entirely unconscious. If you inform him of them he can undoubtedly break himself of the habits, sometimes permanently, but sometimes only for so long a time as he keeps his mind on it. And being obliged to think about another matter is apt to decrease his accuracy.

Many years ago a prominent English gunmaker invented the first "try" gun, and immediately every gunmaker secured one or designed one of his own. For the benefit of those who are not familiar with it, I must explain that this is a gun with an adjustable stock on which the comb can be raised and lowered. Furthermore, the stock can be bent from left to right to give cast-off or cast-on as needed, and can be bent or lengthened at heel or toe.

The "try" gun is of no use in fitting the novice, because he never puts his gun up twice in the same manner. If it is adjusted to overcome one apparent fault, the next time he throws it to his shoulder he will demonstrate an

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entirely different one. The best thing to do is to let him shoot with a stock which is nearly right until he becomes used to it. After that if you will watch his shooting and discover his weak points, you can give him a stock to correct them. If, for instance, he is shooting too high, he needs slightly more drop. If he is shooting off to right or left the stock may be too long, which causes him to twist it, and this may be overcome by chape-ing it. But if he is shooting low or behind his game, which is far more common, he probably requires less bend or a stock straighter at the heel.

No matter what his faults may be, I find that the height of the comb remains about the same for all men. We seldom meet with a man who has any peculiarity requiring more than possibly one and five-eighths inch drop at comb.

Another reason why I have never favored the "try" gun is because it is comparable to giving a medicine to appease an ailment without going back to correct the source of the evil. A good shot with a certain fault in his shooting may go to a gun fitter and after the expert has watched his work for a while, and made several adjustments in the stock of a "try" gun, he will apparently have overcome the fault. While the change in the stock is still new to the sportsman it will no doubt cause him to correct his trouble, but as soon as he becomes used to it, the fault may reappear. Rather than using a "try" gun

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and changing dimensions to overcome a bad habit, I prefer shooting under the coaching of an expert who will correct the fault so that a normal gun will perform the work it should.

Not only do we point our guns more uniformly with a long, straight stock, but we overcome about half of the allowance for rising game which would be necessary with a crooked stock; and no matter what it is we are shooting at, it is invariably rising. The rabbit scuttling away from the hunter through the brush must be shot in front of; it is the same as a rising shot. The mallard that one springs from a marsh is rising. When ducks come in to your decoys and you sit up to shoot, they see you and flare—again they are rising. Geese, despite their enormous size, have a remarkable faculty for bouncing in the air when they perceive the gun under them. Snipe, when one shoots them as he should—the minute they leave the ground, or as soon thereafter as possible—are rising. Grouse are always rising and while quail may appear to be flying straight away, if you will carefully note their flight, you will find they are generally rising gradually toward the cover into which they are going to pitch.

No matter for what purpose your gun is required, to be satisfactory it should throw its pattern about a foot high. Many an old-timer who is still using a gun of abnormal drop will say it is nonsense to put your face down to a gun; he will order you to stand up like a man with

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your head up, your chin out, and bring the gun up to your eye. If we stood with our chins out and our heads up in an assumed pose every time a bird flushed in cover that would be all right, but as a matter of fact, invariably we are so keen that when we see game, we thrust our head forward to some extent and drop it in line with the gun. It is a natural, aggressive instinct, like raising your arm to ward off a blow, and the fact that when I was a small boy my father encouraged me to use a stock of about three and one-quarter inches drop and bring it up to my face rather than use a straight stock and bring my eye down in line with it so that my cheek would always rest on the comb in the same place and always see the same height above the rib, was a large factor in keeping my accuracy from improving for many years.

Pitch appears to be about the least understood of any influence on the proper fit of a gun. There is no mystery about it and it should be made clear to everyone. In my opinion it is more important than either drop or length of stock in its bearing on one's success.

Pitch is the divergence of the barrels from a right angle with the butt plate. To illustrate, draw two imaginary lines—one down the rib from the muzzle to the breech and continued on beyond the heel of the stock, the other from the toe of the stock to the heel and continued beyond the sight line first drawn. If the lines cross each other at right angles the gun has no pitch.

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To measure this pitch set a gun on its butt plate, muzzle up, taking care that both heel and toe of the butt plate are firmly on the floor. Shove the gun back until the breech touches the wall; since the wall and the floor are at right angles the average gun in this position will tip away from the wall at the muzzle. This amount of divergence from the parallel between the barrels and the wall is the pitch—usually it amounts to from two to three inches.

If the gun had a very long toe the barrels would be tilted toward the wall and the pitch would be void. This rarely occurs except in an occasional old trap gun. I mention it as some people, in speaking of pitch or an absence of it, assume that it can only be below the sight line, whereas it is possible for a gun to be pitched high.

Some say that no gun should have any pitch. Such an assertion is as unsound as to say every man should wear an eleven shoe or a fifteen collar. We are not all built alike. If we were we could all shoot the same gun, and the gunmakers would be out the money they now receive trying to suit those who seek a perfect fit.

If one shoots very accurately and deliberately brings up his gun just so each time, if he is tall and lean and narrow, and above all if he has the trick of thrusting his neck forward to bring his face to the comb of his stock, he can shoot a very long and straight gun without pitch.

This is not an argument on the proper way to shoot. I have learned to adapt myself to conditions and shoot

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deliberately or quickly as the case may require, and it took me twenty years to master the trick. Nevertheless, my inclination is to snap, and no man is really good who always does one or the other. However, I do believe in the easy style with sufficient drop to permit the head being up, rather than the cramped position of some trap-shooters who use a stock too straight for them. These are always your consistently deliberate shots. Show me a man who insists on a very straight gun, and who snaps at every bird that rises and I will show you a man who seldom hits anything.

There are good deliberate shots as well as good fast shots, but the fast man generally requires some pitch to keep him from shooting over. I know I do. Most of us who began shooting thirty or more years ago started with guns having too much drop and too much pitch. It was the earmark of the old American gun. Of course, almost all boys started with some older person's borrowed gun, which made matters even worse—too long, too crooked, too heavy, etc. And it is far worse to have too much drop and pitch than too little. Starting with a gun too crooked I naturally made the same mistake in ordering my first gun. I believe it had a $3\frac{1}{4}$ -inch drop and it must have had at least a three-inch pitch. But what a terror it was on rabbits or other ground game! I simply could not miss a cottontail scuttling away in the briars. You will always

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find your confirmed rabbit hunter using a very crooked gun.

Little by little the style changed, influenced by trap-shooting, which brought a vogue for straighter stocks, and by the increasing sale of automatics and pumps which were made with a standard drop of about $2\frac{5}{8}$ inches at heel and no change except for additional charge. Hundreds of thousands of these guns have been sold, and the straight stock has become more popular.

I believe the straight stock is always better than one too crooked, but if your pump is too straight for you, before you go to the expense of ordering a special stock try giving it more pitch down by taking a little off at the toe. Usually these guns have far too much toe for the average man. Remove the butt plate and cut off a sliver—not too much. Go slowly, you can always remove more, but it is difficult to add it. I believe that the average stock pump gun has about one-quarter inch too much toe for most men.

My bird guns have from $1\frac{3}{4}$ to two inches pitch down at the muzzle; my duck gun $2\frac{1}{4}$ inches to $2\frac{1}{2}$ inches. I had one made three inches, but this was too much.

I prefer more drop and pitch to my duck guns for two reasons—one shoots from a cramped position in blind or sink box, and birds are less often climbing when shot at than in the upland. It is always my aim to get off the first shot from blind or battery before the birds are aware of

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me, while they are dropping in with extended feet. At this time pitch is an advantage. On the second shot as they flare off and climb, I have to cover them a little more. Now if I shot slowly after getting to my feet, so that the birds were rocketing before my first shot was let off, the opposite would be true.

The old market gunners always shot as I try to, and used comfortable drops to their guns, and no one will ever know more about the game than those old fellows did.

You see there are many different angles to consider.

Usually the young chap who is ordering his first gun has uppermost in his mind the procurement of a weapon which will kill as far as possible, irrespective of what his requirements demand. If he gets a repeater it is full choke, even if it is intended for a general purpose weapon and not merely for duck and trap-shooting. If his choice is a double gun it is sometimes full choke and seldom more open than full choke left and modified right, which is the usual specification.

Full choke in the average barrel means 70 percent, and modified choke, though a broad term covering any degree of pattern between full and improved cylinder, means to the maker an average performance of 60 to 65 percent. Consequently, a strong modified barrel shoots but little more open than a full choke. It offers but little more lee-way in the matter of aim and will kill consistently to

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within five yards of the maximum range of a full choke.

It is an accepted fact that trap-shooting requires a hard hitting gun, yet shooting from the standard distance of sixteen yards the 65 percent barrel is far better than 70 to 75 percent and, if pointed right, will account for one hundred straight breaks more often than a closer gun.

It is no news to the trap-shooting fraternity that a great many of the top-notchers habitually use a 65 percent barrel, though they do not advertise the fact. It is also well known that a gun which will consistently smash the clays is a hard hitting weapon to use on ducks; and, as a matter of fact, many of the best wildfowlers I know use 65 percent guns.

The old market shooters of Long Island, Barnegat and the Chesapeake knew their ducks. I have shot enough of their guns to know that few of their big heavy ten and twelve bore weapons were more than 60 percent choke.

Once while on the bay in a good flight of scaup with one of these uncharitable choke three-inch chamber guns I was putting up a rather scrubby exhibition when my guide came alongside the battery and tossed in a rusty old automatic.

"Use that," was his laconic comment. "Don't argue, use it."

I did and soon had him busy down to leeward picking up birds. When he brought me out of the "box" I offered

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to buy the gun but he just shook his head and laughed.

"Go buy a new one, Cap, and have half the choke drilled out of her. That gun of mine don't fit ya any better than yer own, but she give you a chance. Yer supposed to be an expert and I am just an old duck shooter, but I know DUCK shootin' !! Why, the outside decoys weren't thirty-five yards from ya. How many birds did you kill outside of the decoys? Some of 'em fell outside, some a good ways off. You see where they land and call it a long shot but it wasn't when you shot. No bird a-goin' sixty miles an hour falls right where you hit 'em."

That was years ago. Today my favorite duck gun is a double, 70 percent left and 60 percent right and seven pounds weight.

While point shooting usually affords longer shots and requires, when the birds have been harassed and are wary, a hard shooting gun if one is to account for all his opportunities, the fact remains that the average man has not the ability to kill ducks at fifty yards, much less sixty; so there is really no logical excuse for his using a full choke weapon.

If all this is true of duck shooting, it surely follows that a man does not want even a modified weapon for upland shooting. Be it snipe, rabbits, quail, grouse or woodcock, the normal kill is under fifteen yards with the first barrel and twenty-five with the second. The forty

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yard kill is a rare exception that does not occur more than once a day. Yet the average shooter thinks he wants a full choke and modified weapon. Sometimes he is sufficiently advised to order a full choke and cylinder; seldom until he is quite experienced does he reach the modified and cylinder class, which is about right for field and cover. Valley quail and prairie chicken late in the season, and, under some conditions, ringneck pheasants, require a closer shooting weapon, but they are the exception to the rule.

For the average man the safe range at which to shoot ducks is when he can see their eyes, and few of us kill many so far that we could not distinguish their markings, coloration and other features.

To recapitulate, if your choice is a twelve bore repeater for long range work, let it be full choke. This would include jackrabbits, fox hunting, pass duck shooting and late prairie chicken shooting. If you are only a fair shot or want your weapon for battery duck shooting, or as a general purpose gun, let it be a sixty percent modified. For upland shooting exclusively, including woodcock, snipe, grouse, rabbits and quail, it should be an improved cylinder.

If it is a sixteen bore the above rules hold. A twenty should be full choke for any duck shooting and 60 percent modified for anything but quail, where a barrel improved cylinder with an ounce of shot will serve.

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If it is a double twelve bore for turkey, geese, jack-rabbits, doves and foxes, or pass and point duck shooting, left full choke, right 65 percent. For general shooting, left full and right improved cylinder. For upland shooting, left 65 percent and right improved cylinder. For quail and snipe shooting only, both barrels improved cylinder is ample, as your first shot is usually at twelve yards and the second under twenty.

A sixteen bore the same, a twenty full left and 60 percent modified right; for ducks, etc., 65 percent left and improved cylinder for all forms of upland shooting.

For high pass or point shooting let your double be a Magnum three-inch twelve or a ten bore left full and right 65 percent—the sixteen bores and twenty bores have no place here.



CHAPTER FIFTEEN

Trap and Skeet Shooting

ANY sportsmen look upon trap-shooting in its various forms as something beneath their serious consideration. It is not uncommon to hear a practical shooting man say that trap-shooting is of no benefit to the field shot. He maintains that an excellent score on clay pigeons is no indication that one will excel in shooting partridge, ducks or grouse. As a matter of fact, while there is considerable truth in this, the statement is misleading.

True trap-shooting may not be of much benefit to the experienced shot but it is of tremendous importance in teaching the beginner. As a matter of fact I have observed that an excellent duck shooter, who perhaps lives somewhere along our coastal waters where he gets plenty of practice, will not necessarily be a first-class performer on quail. Similarly, the partridge shooter from the hills of Vermont may not be able to put up an equally good performance the first time he tries his skill at ducks and geese. In fact, we seldom encounter that very rare being, a first-class all-round shot.

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To be sure if a man had demonstrated his skill at one form of game, he learns how to handle himself on another more readily than a beginner but this is equally true of the trap-shooter. The fact that a man is a good performer on clay pigeons is no proof that he will excel on game, but it generally indicates that when confronted with game shooting he will learn at least as quickly as a man who has never had his training on clay pigeons.

We often hear a sportsman cover up his lack of skill by saying, "I am a game shot—not a target shot." I would not expect the most skilful quail shooter to shoot as well, his first time on clay pigeons, as an expert trap shot. To be fair, we should not expect a trap-shooter to excel on game until he has become used to it, but I would expect the man who really was a good game shot and not merely thought he was, to make a very much better score on clay pigeons than I would expect the clay pigeon shooter to make on game. If the self-styled game shot cannot break 75 or 80 clay pigeons out of one hundred at sixteen yard rise or make a fair showing at skeet, it is a very clear indication that he is not as good a game shot as he considers himself.

Most of us overestimate our skill at killing game. The average hit is so spectacular as compared to the ignominious miss, that we do not remember the latter for long. If a man was to sit in a duck blind in a good flight and kill fifteen ducks in two or three hours, he would

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be apt to go home and think he was a good duck shot. He probably would not take into consideration how many shells he fired to secure his birds. As a matter of fact, if he hit one duck with three shells he would have done very well indeed, and be above the average, but the trapshooter who failed to break something like ninety or better at a string of clay pigeons would know in a most convincing way whether or not he was a good shot.

In game shooting there are so many different things, such as the range of the bird, the light, the wind, etc., which must be considered more carefully than under normal trap-shooting conditions, that it is extremely difficult to maintain as consistent an average. I heartily endorse trap-shooting for teaching the novice the proper use of a shotgun. In fact, by no other means can he be so readily taught the proper handling of a gun with safety to himself and to others, the necessary leads for shots at various angles, and that all-important matter of time or pace, including the proper judgment, the swing of his gun, the speed of the object, etc.

In the beginning one should use a hand-trap. Let the operator stand right beside the shooter where he can closely observe him and see whether he flinches. To prevent this, the loads used should be light. For the very small boy I would, of course, recommend the .410 gauge gun. The ammunition is cheap, the report is mild, the recoil is negligible. With it he can learn to point very

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accurately. Unless he is a small child, he can probably shoot comfortably a twenty bore gun loaded with three-quarters of an ounce of 8's and $2\frac{1}{4}$ drams of powder, and if it has a modified barrel he will be encouraged much more quickly by the number of targets which he breaks. In fact, a better gun could not be used by anyone in the beginning.

If a small bore is not available, then let it be a moderately open twelve of fair weight using $2\frac{3}{4}$ drams of powder and an ounce of shot. As the shooter gains proficiency the operator can increase the speed and angle of the targets. After he has shot a total of 250 targets, he should be about ready to try his hand at trapped targets in the orthodox way from the sixteen yard line, if his interest is in that direction. But sixteen yard targets are, of all, the least capable of increasing his efficiency as a general wing shot.

One might safely say that the biggest factor in the successful breaking of conventional clay targets is concentration. One may be a gifted shot in the field. He may be able to rise to the occasion and bring down a live target under the most difficult of conditions, to swing and shoot over his shoulder in thick cover at a vanishing grouse, to catch a quail just at the top of its rise as it disappears over some scrub oaks in the distance, to pull down the high passing ducks in a most professional manner—all because he has a perfect sense of balance,

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time and pace,—and yet it may be totally beyond his ability to break clay targets for a score of twenty-five straight, or ninety-four out of one hundred.

It is my own personal experience that I can break close to twenty-five birds for the first round but in three succeeding strings of twenty-five, I will fall off. I have observed the same phenomenon among other trap-shooters. It is purely an indication of either fatigue or lack of attention. Being rather stronger and heavier than the average man, I am quite convinced that it is not a matter of strength in my own case. A man can frequently key up to the point of making a good score in his first string but few can maintain sufficient concentration to hold perfectly through a succeeding seventy-five shots.

In conventional target shooting from the sixteen yard line, the shooter requires, of course, a straight gun,—one which permits him to hold somewhat under a target so that he can clearly see it and pitch the charge high enough to break the target. Obviously, if the gun was so crooked that to hit a rising target he had to cover it, he could not tell how much he was shooting above or in front of it.

The shooter should acquire an easy stance—the body supported equally on both legs with the feet spread about two feet apart. He should face almost squarely toward the trap house, holding over the center and about two feet above it. From this position he should be able with a short swing to cover a bird at any angle. By keep-

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ing the target some six inches above the muzzle of his gun and slightly leading it on the crossing angles, he should break it every time, provided the swing of the gun is maintained in perfect uniformity with the pace of the target.

The pattern of a three-quarter or full choke gun, which is best suited for the purpose, is such that when used with $1\frac{1}{4}$ ounces of No. $7\frac{1}{2}$ shot there is no possibility of the bird slipping through unbroken, if the aim is correct. The difficulty with clay target shooting is not in breaking one, two, or a dozen or twenty-five birds thrown under these conditions but in continuing to do so for one hundred straight. Such a game, and it is only a game, is most monotonous. It does not and cannot be made to appeal to the average sportsman. Other than teaching him where to hold on a straightaway or quartering bird, it is of little use to him. In fact, prolonged practice at such birds is apt to make him far from flexible in the field.

For a long time there was a strong opposition among the dyed-in-the-wool trap-shooters to any new form of the sport. Progress frequently has to battle its way over the obstacles of established precedent and prejudice. For ten years I have argued periodically in the pages of magazines for an improved form of clay target shooting which would appeal to the mass of practical shooters. As a result I was looked upon as a sort of arch enemy of conventional trap-shooting. Numerous suggestions were made, with the



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idea not of upsetting the old established system which had its legitimate place, but rather of introducing some innovation to run independently or hand and hand with it, which would attract new blood to the fold through its similarity to the conditions one meets in shooting game. I suggested the more liberal use of the hand-trap, targets thrown from towers, and "shooting walks" as devised for some of our sporting clubs.

Eventually the game of Skeet was devised and sponsored by Mr. William Foster, and gained such popularity among the shooters of this country that it now has its independent organization and is unquestionably here to stay.

For the benefit of the many who are not wholly familiar with the lay-out, it would perhaps be best to describe the system briefly. The lay-out is planned like the dial of a clock, upon the radius of a half circle with a diameter of some forty yards. Only two traps are used and they are placed at what would correspond to six and twelve o'clock on the dial. In other words, diametrically opposite and forty yards apart.

The direction and elevation at which these traps throw their targets are never changed. Each trap throws exactly over the center of the other, but the elevations are different. One throws a high target and the other a fast low one. The rules specifically state that each trap must have sufficient force to propel its target twenty yards

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beyond the opposite trap, or a total of sixty yards. You will find this is a very fast target.

There are eight stations for the shooters at about ten yard intervals. Seven of these correspond to 6-5-4-3-2 and 1 and 12 o'clock upon the dial of a clock. They are called starting from No. 6—1-2-3-4-5-6-7. The center position, an equal distance between the traps, is No. 8.

The shooter steps up to station one, puts one shell in his gun, stands abreast of the trap with his gun below the elbow, and calls "pull." The target is sprung and goes straight away. He then reloads and on command the opposite target is sprung and sends a high incomer toward him. Each of the other contestants takes his two shots at station 1, after which the first shooter proceeds to station 2. Here the same procedure is followed. It will be seen that as the direction of the flight is constant, the shooter's different positions afford him an ever-changing angle.

At station 2 his straightaways and incomers have become slight quartering while at station 3 they have become decidedly quartering and at station 4, which is the center of the arc, they are both right angle targets. From there on around at five and six they are reversed until at station 7, he again gets two straight birds—one in and one out, but in the reverse position. The low one has become an incomer and the high one a straightaway.

The shooter then steps to the center at station 8, where

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He first faces the station 1 trap and then pivots and calls for the other at station 7. He must take each of these targets before it reaches him. If he should hold his fire until one passed and then wheeled to shoot, which is obviously an easier way to hit it, it is declared a lost bird. As each has only a twenty yard flight from this position before it is directly overhead, this demands the fastest kind of snap-shooting.

Having disposed of all these targets, the shooter returns to station one and loads both barrels or, if he is using a repeating gun, puts a second cartridge in the magazine. On the command "mark" both traps are sprung simultaneously, offering him a double at diametrically opposite targets. After shooting at the straightaway target, should he fail to get on to the incomer before it had passed the opposite trap, it is judged a lost bird. In other words, all targets must be broken within the forty yard circle.

Four sets of doubles are shot, at stations 1-2-6 and 7. Thus twenty-four shells are accounted for including the sixteen single targets from No. 1 to No. 8. He then finishes with one optional shot.

From this one will observe that with the least expenditure for equipment and labor of operation, Skeet affords every possible type of shot which one might encounter in upland game bird shooting conditions. Furthermore, because of the targets' speed of flight over forty yards with traps accelerated as the rules specify, the shots are

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much more difficult than would be offered by nine game birds out of ten even though the live birds were flying at the same angle.

This is far different from conventional target shooting. There the single trap house is sixteen yards in front of the shooter and the birds must not be thrown more than thirty feet high and not over 55 yards in distance with diverging angles of not more than 45 degrees or they may be refused and another target demanded.

Though a man may break 98 out of a hundred at sixteen yard conventional targets, the same man will do very well to go above 90 at Skeet and very few men average above 80.

Skeet shooting, though an excellent competitive game, was invented solely with the idea of improving game shooting skill. Consequently it has been devised so that the gun that is best for game shooting is also the best for this. In other words, one does not need a special gun such as he would require for the highest proficiency in trap-shooting.

The best gun for Skeet might well be such a gun as I recommended for quail in a preceding chapter. In other words, use a light open bore gun either a twelve or a twenty; and a good quail load for such a gun is an admirable charge for Skeet targets.

It is beyond the scope of this volume to go into the subject of Skeet and Trap-shooting in detail. It should be

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sufficient to say that a man should approach his Skeet shooting as he would his quail shooting.

Stance or proper placing of the feet is very important. Time and pace is as important as in any other form of shooting. Unless a man is fast, he cannot hope to hit all of the targets. This implies that the gun must fit the shooter as one simply cannot smash all the Skeet targets by merely snapping at them. Those who make a consistent score aim accurately at their birds and swing like a flash. Their scores remain good except when from fatigue or poor light, their pace begins to lag.

The incomers should all be taken about midway between the shooter and the center position, that is, after a thirty yard flight. One should be careful not to overshoot the straightaways, and from the half-way position at station No. 4 one should swing fast and keep on swinging in front to get his charge well before the target. Yet an overconcentration on this is liable to cause undershooting if care is not exercised.

If I were buying a gun for straight target shooting I would suggest for the average man an 8 pound twelve bore single barrel trap gun or a pump, bored full choke with a raised ventilated rib and soft recoil pad. It should have a drop not to exceed $2\frac{1}{4}$ inches at heel by $1\frac{1}{2}$ inches at comb and as long a stock as can be handled comfortably.

For Skeet I would recommend a gun not to exceed

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6¾ pounds weight irrespective of whether it is a twelve or a twenty. By all means a double barrel with 28 inch tubes bored improved cylinder in both. If one barrel was to be choked slightly, it should be that which is shot first at the outgoing birds, because in every instance the second shot at the incomers, when shooting doubles, must be taken close in to the shooter.



CHAPTER SIXTEEN

Choosing the Field-Glass

IN THE course of twenty years of shooting different kinds of game in various fields of adventure, I have had considerable experience with field-glasses and have come to the conclusion that they are second only to the rifle in importance. I propose herein to describe the type of glass I have found most desirable for sporting use, and also to attempt to explain to the inexperienced how they may distinguish between the fine instrument and a clever fake. There is probably no part of a sportsman's equipment regarding the selection of which the average man knows so little as field-glasses.

First of all, one must ask himself what kind of a glass he needs. For what purpose will it be used? And, by no means the least consideration, what can he afford to spend? A great deal depends on one's pocketbook.

Field-glasses are of two distinct varieties: the old-fashioned Galilean type so familiar to the yachtsman or race-track habitué, and the modern prismatic type, which in the minds of most people is immediately associated with the army officer. The former is really a short, double-barreled telescope with direct vision through a series of

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simple, round lenses. The prismatic type indirectly reflects the field of vision through mirrors set at opposing angles.

The advantage of the prismatic glass is immediately apparent to anyone who compares the two side by side. The superiority is principally in its compactness and far greater width of field. It will afford approximately twice the field with half the bulk of the Galilean glass of the same power. It is for this reason that one so seldom sees a really powerful Galilean field-glass. A six or eight power instrument of this type, to be any good, must be of enormous size and weight. Such a glass is so ponderous that it is entirely impractical to carry it suspended from the neck for instant use. Consequently, we seldom see an old-type field-glass of more than $3\frac{1}{2}$ to 4 power. The 6 x 30 prismatic glass will be not over half its bulk and will give double the field.

In other words, if you placed the Galilean glasses upon a herd of caribou 150 yards away, you might have fifteen or twenty of the herd in view at one time, whereas with the standard prismatic you would have possibly three or four times the number of animals in view. If you were using the glass with the smaller field, the most desirable head in the herd might walk away under cover before you picked it up and observed the size of its antlers.

I was once watching a herd of caribou on a high mountain burn through a fine pair of wide-field 8X



GOOD GLASSES ARE INDISPENSABLE IN THE WEST

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binoculars. My guide was sitting beside me with an inferior type of prismatic glass such as most guides buy. For some time we sat looking them over, with our glasses fixed on the herd and our elbows resting on our knees for steadiness.

Then in the corner of my glass, I saw one fine old stag. I immediately called the guide's attention to it. Afterward he remarked that it was curious that he had not seen it, as it was so much better than the rest. We checked up on our glasses and found that I had forty-eight of the animals in view without moving the glasses from a rest position, whereas he could only count thirty-one.

Suppose we had had only his pair of glasses, and had watched the caribou for a half hour, as we did, and had then decided there was nothing desirable in the herd and moved on. We would undoubtedly have lost one of the finest trophies of my trip.

The disadvantage of the prismatic glass lies in its far greater cost of manufacture, due to the complicated and necessarily high grade of construction. It requires much more care and accuracy to make a reasonably good prism glass than a really good Galilean glass. The latter can be used with fair success even if it is a little out of adjustment.

Prism glasses, however, because of their greater power, are ruinous to the eyes if not perfectly aligned. There-

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fore, it is of the utmost importance, when selecting such a glass, to make sure that you are getting a really well constructed instrument. The prisms should be set in so firmly that they cannot shake loose. I have carried one pair of prism glasses several years and have subjected them to the severest use in stalking game in the Rockies. They have been battered against rocks, dropped many times, subjected to heat and cold and rain and sleet. Yet they have never been taken apart to be cleaned.

Imitations, which at first may seem as good, may develop loose prisms after a little jolting and rough usage, and be useless until an expensive repair bill has been paid. Every pawn-shop and sporting goods store catering to people who want cheap trash has its windows decorated with glasses marked "Prisma" or "High Power" on one tube and on the other, "France" or "Germany."

In justice, we must say that there are just as many utterly worthless Galilean glasses for sale in the same type of shop. Only the Galilean glasses will sell for eight or ten dollars or whatever the chap who runs the store can get for them, while the prismatic will sell from eighteen to twenty dollars. As a matter of fact, one is as worthless as the other. Though of different design, they are cut from the same cloth. They are made attractive in appearance, but are invariably out of focus or adjustment when purchased, and become worse every time they are used.

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The power that is marked upon the cheap glass seldom means anything. Unless the glass is of some world-renowned make familiar to the prospective purchaser, he should take it outdoors and test it for himself. This any novice can do.

Select an object about a hundred yards away and adjust the focus of the glass in question to suit your eyes. Then, instead of looking through both barrels of the instrument, look at the object with one eye exposed and the other through one barrel of the binocular. You will then see two images of your objective. Let it be a chimney or a small window, even a flagpole—anything of such size that it does not fill your field.

Now, concentrating both eyes upon your objective, move your glass about until the large image, which will be the fainter, overlaps the smaller and more positive image. If the glass is marked 8X, it should magnify eight times and, consequently, bring an object eight times nearer than it would appear to be with the naked eye. Therefore, the large faint image should appear to be eight times the size of the small definite one.

As it will be impossible to hold the glass steadily enough to make the images permanently overlap each other it is best to aim from a rest, with the elbows on a table or the back of a chair.

You will find that many of the cheapest glasses of questionable origin will be marked 6X or 8X, yet the

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overlapped image will only be three or four times its actual size with the naked eye. This definitely proves that the glass is a fake. However, many glasses of questionable origin and inferior quality do magnify as first-class instruments. They are, however, very deficient in breadth of field.

Of course, it should always be borne in mind that the higher the magnification, the smaller the field of view and the less illumination. So you must not compare two good glasses of different power and expect the same brightness, width of field and definition. We will come back to this subject later.

If you insist on buying a questionable glass, it is best, if possible, to test it as to light and covering quality beside a first-class instrument. It is safe to say that if two glasses are presented to you, one costing twenty dollars and the other sixty, both marked 8X, the sixty-dollar glass will give you about forty dollars' more illumination, or brightness. On a dull or dark day it will make things look as if they were set out in bright sunlight.

It is just as easy to test the field of two glasses as it is the magnifying power. Using only one eye, look at a building a hundred yards away from you, or, for that matter, at any distance, but not too close. If you have to do it at close range, rest the outer edge of the field on a certain brick which you can easily distinguish, and count the bricks to the opposite side of the field. Then do the

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same with another glass. The one that shows the greater number of bricks has, of course, the wider field.

It is most satisfactory to make this experiment on a number of buildings at long range. One glass might take in half a city block of buildings, whereas the better glass would take in the entire block.

The size of the field of view with a prismatic binocular is not at all controlled by the size of the objective lens. This may seem surprising but can be easily proved. If you will look through one side of the binocular with a very large objective lens and measure how many of the buildings you can see, as described above, and then place before the lens a card through which you have punched a small hole, leaving a very small part of your lens exposed, the number of buildings which you will see will be just the same as before.

It is high illumination which is lost with small lenses and this is very important to the sportsman. Small lenses, however, have the advantage of permitting the glasses to be more compact and much lighter in weight, and this often means a great deal. Therefore, one must sometimes choose between luminosity and weight. And it does not follow that the glass with the smallest lens is necessarily the cheapest. Greater accuracy of manufacture is required with the smaller lens.

Another advantage of small lenses is that they afford far greater depth of focus. Most binoculars, when cor-

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rectly adjusted for distance, have to be readjusted for objects close by—that is, within fifty feet. Small glasses with objective lenses only 16 mm. or 20 mm. in diameter, when once focussed for a given distance, will also be correct for all objects as close as twenty or twenty-five feet and distant to infinity.

Let us now consider the type of glass which you need.

For the Rifle Range. To use in spotting targets, the shooter requires a high powered instrument. It is only with the steadiest hold, under ideal conditions, that one can see the .30 calibre bullet holes in the white at a hundred yards with an 8X prismatic glass of the very best quality. As the light changes they will fade out completely. I was once using a 10X prismatic glass at a hundred yards spotting for a friend, and frequently had to readjust the glass, as the bullet holes would fade out. Generally the light is not quite right, or there is too much haze.

A pair of 12X prisms are fine if equipped with a tripod, but such a glass is fearfully expensive, and one does not require the large field of vision of the prismatic instrument for target spotting. Once the target is in focus, a small field serves just as well. Consequently, I would recommend a regular telescope of the straight type, such as was formerly used by mariners and amateur astronomers. It should be of 24X and equipped with a tripod mount. A fairly good one can be procured for

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\$25.00 and an excellent one for \$50.00, whereas a 12X prismatic binocular would cost \$150.00 or more.

For Long Range Stalking. In the Rocky Mountains for sheep, goat or bear, on nothern trips for caribou, or on the great plains of Central Africa, in fact, wherever one has to do his spotting at considerable range, I find that a light, strong 8X prismatic binocular is by far the best. It should be a wide-angle glass, giving about 150 yards' field at a thousand yards.

Many sportsmen make the mistake of buying a pair of 10X or 12X prismatics, believing that because the glass magnifies so much more it must be better and bring things nearer to them, making it easier to select a good head from a herd of moving game. This is true under ideal conditions. Unfortunately, the conditions are seldom ideal.

The trouble is that the more powerful instruments are bulky, have less luminosity and a narrower field. Such a glass is also more sensitive to vibration. If one is breathing hard, and he generally is from climbing for sheep and goats at ten or twelve thousand feet, he simply cannot hold the glass steady enough for a quick look. He has to get down and rest the instrument on some firm base.

One is constantly breaking over little ridges which afford a new horizon and expose new country to view. It is not always practical to sit down and steady your

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glass. Furthermore, at such high altitude the wind blows almost incessantly, so that often, even if one has such a rest, it is almost impossible to hold the glass still.

You will notice that sailors almost invariably use low-powered glasses. It is possible to secure a fine marine prismatic, but these glasses are bulky and very expensive. Few seamen can afford them. The average yachtsman will use a Galilean 4X glass. He has less field, but he does not require much. He can just as easily find a ship on the open sea by sweeping the horizon with a small field, and neither the action of the waters nor the throb of the motor will pull his eyes out of their sockets by the strain created from the vibration, as would be the case if he were using more powerful prismatics.

I have attempted on a yacht of two or three hundred tons' burden, at anchor with the engine slowly running, to use the finest pair of 10X glasses procurable and found it utterly impossible to see anything through them. Unless one can afford a pair of a 7 x 40 marine prismatics, he is best served on the water with the 4X Galilean glasses.

I have frequently sat out high above timber-line, where I knew my country and could safely get down in the dark, until the valleys were completely shadowed in the gathering darkness, yet the mountain tops were gloriously bathed in a rosy hue of sunlight. It is just at this time of day that you will see the finest old specimens which make the best trophies, wandering out to glean their supper

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from the high grass slopes. One almost freezes to death, sitting quietly behind some projecting ledge of rock, sweeping the foreground with his glasses, as the light gets dimmer and dimmer. This is just the time when an old bear is most apt to be out, digging industriously for marmots.

In this case the light is weak, particularly below you, where you are looking for game, and the farther down the slopes you look in the edges of the timber the darker it is. At such a time the high luminosity of a fine pair of glasses is most necessary.

In a glass larger than an 8X, the foreground appears dim or indistinct and foggy, and the field is immeasurably cut down. If there were a herd of game in the distance, not only might one overlook a good trophy, but he might miss the entire herd. When one lies down, as he constantly does to scan a distant mountainside, which probably would take a half hour, one has to shift the glass with a small field frequently and, in consequence, is more apt to pass up an entire section. In either case, he might thereby overlook a trophy which he has traveled thousands of miles and has spent a small fortune to secure.

The sportsman requires a maximum of light and field and clarity of definition rather than magnification. I might suggest one other expedient.

If accompanied by a guide, a sportsman can wear a pair of 6X or 8X glasses around his neck for instant use

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and let the guide carry a pair of 12X binoculars for long-range searching. After game has been picked up in the field of the small glasses, the larger instrument will frequently save several miles' stalking or several days' time in ascertaining the worth of the specimens.

As an illustration, when I was hunting north of the Smokys three years ago, on one occasion I had hunted nine days without seeing a single ram. We were out of meat, one pair of shoes was almost worn out, and I was utterly exhausted. About three o'clock in the afternoon, after painfully climbing to the summit of a high ridge, we looked down into the opposing watershed two and a half miles away and discovered a band of eighteen sheep.

With a pair of 10X glasses we watched them for a half hour, but could not tell how good they were. Finally, we tossed a coin to see if we would take a chance on climbing all the way down into the basin and making the long stalk necessary to get near them. We realized that when we were through we would have to climb all the way back up again, and it was a perilous climb, for the slide we were on was covered with ice and snow.

Finally, we screwed up courage to take the chance. We got over to the sheep and discovered they were all young rams without a desirable one among them. It took us two hours to climb back to our point of vantage, and we still had six miles to go home.

A SCOTCH STALKER USING HIS GLASS



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So a better equipment than the expensive 12X binoculars is the 8X, suspended from the sportsman's neck, with the guide carrying a 24X sporting scope. The British use the latter in Scotland for stalking the highland stag. This glass would be thoroughly impractical for the average man to use alone, due to its very narrow field. Once the game is found, it does not take very long to get them in the field of a powerful instrument and appraise the value of the head. One is then equipped for all emergencies, and the long barreled telescope has the added virtue of being much cheaper than the high-powered prismatic.

To illustrate the skill with which the Scottish deer stalkers can use a telescope I will cite an instance which happened in the Forest of Erchless a couple of years ago.

Frasier, the head stalker, had been spying from a high point of vantage for over an hour, carefully scanning every foot of the terrain when he laconically said, "I see a beast." This meant that he saw one well worth our efforts as there were many others in sight.

"Where?" I asked.

"Weel, it's difficult to show you—but take the glass—do you ken yon high knobbie? Now—look doon the slope about 100 yards and you see a flat rock — Ah! and noo about fifty yards to the left and below you can see three rocks close together—aye, that's them—and on the base of one you see a reddish spot—aye! Weel, that's him—lying doon—and I ken it's a bonny beast."

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And it was—a ten pointer. Such is the skill of the deer stalker with a 25 to 30 power glass. This spotting was done at a range of over a mile and a half. It takes years of practice to use a glass this way. And the Scots have no equal at it in this world.

Hunting in Timbered Country. Here the light is often poor, and the atmosphere is seldom as clear as in the high altitudes of the West. One can rarely see over a few hundred yards across a burn or a little woodland lake. In the forest itself, seventy-five yards is the limit of view.

I am speaking now of the moose and deer country of eastern Canada. Under these conditions, one requires the greatest possible light-gathering power and clarity of vision and definition. Breadth of field and magnification are secondary considerations; consequently a 6X glass is quite large enough and has to a greater extent the qualities demanded.

In conclusion, I would like to make mention of a few points in construction. There is a difference of opinion as to whether the prismatic glass should be of the type with the central focusing screw or with the separate eye-cup device.

Let me say that if you want to lend your glass frequently to your friends, by all means have an instrument with the focusing screw. This is not so water-proof nor damp-proof and is more apt to get out of focus if subjected to severe mechanical shock, and the glass must be

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screwed down every time you put it into a case. However, it is the only kind for the lender.

On the other hand, if your glasses are for your personal use and you have in mind a hunting glass, by all means get one with the individual eye-cup focus. Set it for your own eyes and leave it there for all time, for there is nothing harder on your eyes than constantly adjusting the focus. Or learn by heart your ocular setting, so that you can adjust by the numbers on the dials without refocusing.



CHAPTER SEVENTEEN

Bear Hunting

PROBABLY there is no wild animal in the world in which we have a more affectionate interest than the bear. Who does not remember that bedtime story of the three little bears—"Who has been sleeping in my bed!" and "Who has been eating my porridge!" A vision of those colored lithographs in the book that I thumbed to pieces as a small boy is still well preserved in a dim corner of memory's cupboard.

Visit the zoo and I venture to say you will find more people around the bear den, watching and laughing at their absurd antics, than in any other part of the menagerie.

In the sportsman this interest takes on a different aspect. There is no trophy that he is so desirous of securing as a bear.

So far as he is concerned, the bears of America may be divided into three classes—the common Black Bear, the Grizzly and the Great Brown Bear of Alaska. Scientists would turn up their superior noses at this cavalier handling of the situation. According to them, there is an infinite variety. Possibly there is and, again,

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perhaps they are a little too zealous in trying to find sub-species to which to attach their names. The Western Brown and the so-called Cinnamon are but color phases of the Black, just as the Silver Tip is of the more common Brown Grizzly.

The Black Bear is the most widely distributed of his tribe. He is found from Ungava to Florida, and from Alaska to Old Mexico, and long may he flourish, for he is the clown of the woods. At one time he was in danger of extinction, but so many states have established laws for his partial protection that he will certainly increase over much of his old habitat. They are still comparatively plentiful in the Catskill Mountains, within eighty miles of New York City, and in the Southern Appalachians where, as Horace Kephart said, the poor Whites have practically exterminated all other game, the bear still thrives.

Black Bear shooting in the East, other than the hunting of them with hounds in the Everglades of Florida, the cane brakes of Louisiana and Mississippi and through the Southern Appalachian Chain, is incidental. The statement which one so frequently hears that So and So has gone to Maine, or Quebec, to hunt bear, is absurd to anyone who knows about the mischievous little fellow. One cannot hunt bear as one does deer or moose, with any degree of success. Of course, if one kills a moose and is in the neighborhood for the next week or two, it pays

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him to watch the carcass, as a bear may come to the kill; or if he finds bear signs plentiful in a beech grove, it might be well to sit there of an evening or early in the morning, with the hopes of seeing one. But bears are travelers and are forever roaming around the country.

The only sure way of getting a Black Bear is to have the guide lay a bait, or several of them, prior to your trip, and put out traps, but if that is your idea of sport you are welcome to it. I find it far more fun to shoot rats in a corncrib.

The first time I met a bear I was hunting on the head waters of the Tobique in New Brunswick. We were in a lovely grove of beeches, and it was October. The ground was carpeted with yellow leaves, sodden from the previous night's rain, on which we made not a sound, and the sunlight filtering through from overhead cast glittering splotches. All was still, save for the industrious tapping of a woodpecker, busily engaged about his breakfast. Suddenly we saw a Black Bear a short way off, digging on a slope. Recognition was mutual and, like a flash, Mr. Bruin was under way. I threw the rifle to my shoulder as he went scurrying down the slope, and on the report he rolled over, jumped to his feet and raced ahead. Again I fired, and he stumbled, went head over tea-kettle and disappeared.

I turned to my guide jubilantly, and exclaimed, "By Jove, I've got him!" He shook his head dolefully—

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"Don't believe you hit him." "Good heavens, man," I said, "I knocked him down twice!" "Maybe," was the laconic reply. "I'm thinking he was just scared and tripped up at the report of the gun. Bears ain't good at running down-hill, though they allus do it. I've seen 'em do that before. Some fellows say it's a trick to fool you." We moved forward to where the bear had made his first flop and found no sign of blood. At the second place where he turned a flip-flop the result was the same. We followed him for three or four hundred yards and there was not a sign. I probably had not come within feet of him.

Despite their speed, they are clumsy little fellows, and I have no doubt but that I had actually scared him out of a year's growth. "Gosh," I said to the guide, "did you ever see anything turn around as fast as that bear did?" "Turn around, huh," he replied, "that bear just turned inside out and was going the other way."

Since then, I have killed several Black Bear, but it has always been in the West, where they are easy to see above the timber-line. There the situation is different. Blacks are far more plentiful than Grizzlies. In stalking other species of game, one very frequently spies one grubbing on a mountainside above the timber-line. The stalk may be fully as exciting and exacting as that of any other species of game, for there is nothing more wary than the bear, unless it is the mountain sheep.

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The Black Bear is no harder to kill than the White Tail. A deer hunter's equipment is all that is required. The .30-30 or a .250-3000 is ample for that purpose. On the other hand, one going West to hunt for a general bag, from moose and grizzly down, requires a heavier rifle. As has been suggested before, a 7 m/m or a .30-06 is unquestionably the best. Such a rifle is big enough for the heaviest grizzly.

Grizzly shooting, I regret to say, is practically over, within the confines of the United States, with the exception of a few animals in Montana, Idaho, and Wyoming, and these principally along the outskirts of Yellowstone Park. There may be some left in Colorado and perhaps a couple of dozen in Arizona, but I doubt if there are as many as that, and certainly there will not be for long. Grizzly will exist as long as we have Yellowstone Park, but they are rapidly falling into the same class as the buffalo.

While I have the greatest respect for the Grizzly Bear and think they should be preserved, I have little patience with the harrowing stories we hear about their ferocity. I have had first-hand contact with many men who have been in tight places with Grizzlies, and personally know two who were clawed within an inch of their lives, one a Cree Indian with both hands paralyzed as the result of shoving them in a bear's mouth to protect his throat, and the other a Canadian ex-soldier, who was smashed up by



A GOOD GRIZZLY BAGGED IN ALBERTA IN 1928

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a Grizzly and left for dead. My guide, Nickerson, stopped a charge from a bear that determinedly came up-hill to get a sportsman he was guiding and he warned me never to shoot up-hill at them as they were almost certain to charge down.

My own experience, while Nickerson was guiding me, was so absurdly different, that it will bear the retelling. After tracking a Grizzly for several miles we reached timber-line and sat down to use our glasses, searching a large basin in which we thought he might be feeding. After watching the mountainside for some ten or fifteen minutes, we looked down on a little stream that was rumbling by at our feet, and there, not more than ten or twelve yards from us, was the Grizzly, mooching across the burn. Recognition again was mutual. Mr. Bear just collapsed on his head at the first shot. Had I not fired, I am quite certain he would have run like a jack-rabbit. Every other Grizzly I have seen has. At such short range, however, it is possible that if wounded he would have charged; in fact, I think it more than possible, it is highly probable, but the first shot at a Grizzly is seldom fired at such short range.

It is my opinion that, correctly speaking, there is no dangerous game on the North American Continent. I believe back in Lewis and Clark's day both the mountain lion, or panther, as he was then called, and the Grizzly were very ferocious. There are a few isolated places in

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British Columbia and Alberta where they still are. It is largely because they lack experience with men, and it is to the credit of the bear that he has such intelligence that he has decided to use discretion rather than brawn in his effort to survive.

Undoubtedly, food has a great deal to do with their temperament. In some sections of the country, the Grizzly is almost entirely vegetarian. In such localities it is interesting to note that he is not very dangerous. Meat eating bear, however, in other sections are known to be "bad business." Even the great Alaskan Brownie would hardly be called very dangerous. In fact, there are fewer reports of charging Alaskan or Kodiak, as they are commonly called, than of the more common Grizzly.

While I by no means consider the bear, even the Grizzly, a hazardous opponent, the fact remains that he is sufficiently ferocious to demand careful shooting. One cannot afford to spatter him with hastily ill placed bullets, as is so callously done in shooting other species. Once heavy game is struck and angered by pain, if it decides to come on and is still on its feet, it is very difficult indeed to stop it. Wounded game, when charging, is much like the prize fighter in the ring, who has been only half knocked out. He is impervious to further shock and it takes a very powerful man to put him off his feet. His nerve centers are deadened and do not react to further pain. I have observed this in bear, moose and

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caribou. Hit them in a vital spot and fail to kill and you often require an astounding number of shots to put them down, if you wish to do it quickly. They will probably go down and stay down almost as soon if left to succumb to the first blow. Consequently, I would make the suggestion that there are only two safe shots to take on the bear—either the neck or the shoulder. The neck shot is a paralyzing one, but unfortunately too difficult for the novice to make, as one is very likely to shoot high through the long mane on the bear's neck. The shoulder shot is best on all species, because if the bullet smashes the shoulder the leg is completely disabled and the animal cannot travel with any rapidity either toward or away from the hunter, and if the bullet continues to penetrate deep enough and is not placed too high, it will also hit the heart. The bone and brawn of the Grizzly is so tough that a heavy bullet is required which will smash through to the vital area. When such a bullet has been expanded on bone and heavy muscles, to about twice its normal diameter and then enters the lung or heart area the animal struck will not survive for long.

In case of a charge it is imperative to hold low. Under no conditions shoot at the head. The skull slants back at a long angle, from which a bullet will glance off, as it would from a rock. A Grizzly's head looks large because of the long hair and it is astonishing to see how small the skull is when he is skinned. Probably more men have

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been fatally wounded or killed by bears and charging lions by instinctively shooting at what looks like the most vital part of the animal, the skull, when they should have held low in the breast for the lungs and heart. Therefore, one should never take a frontal shot at a bear, unless it is necessary to stop him, and never take a stern shot out of respect for him. It is almost impossible to kill him from this position, though he may succumb days later from this cruelly inflicted wound. Get him sidewise—hold low in the shoulder where the heart rests upon the ribs and squeeze the trigger.

I had one ludicrous experience, when I again had the good fortune to come within very close contact with a Grizzly. My pack train was moving down a turbulent stream. The forests were so thick on both sides of us that we had to take the bed of the stream rather than the bank. As the horses paddled along over the rocks, a bear that was grubbing for berries on a bluff about ten feet above us stood up on his hind legs and looked over the bank at us. If he had not been a polite bear he could have spit in my face. Like a flash he was out of sight and quick as I was to get off the horse and scramble up the bank, Mr. Bear had disappeared, though it was some two hundred yards to the nearest cover. I believe I would have shot that gentleman, for it took us about three hours to collect the pack train and some of those horses all but climbed trees.

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The sheep and goat hunter's equipment is ideal for the Grizzly. In most instances they are killed above timber-line and, for that matter, practically all mountain game is. A powerful pair of field-glasses is absolutely essential and is better when backed by a telescope. I would personally prefer a .30-06 bolt action rifle, or a 7 m/m, though I do think the latter is a little light for bear. For Alaska, if a man is buying a special rifle for that purpose, I would suggest one taking the .375 Magnum cartridge, though for myself I would ask for nothing better than my Springfield and a 220 grain Express cartridge.

The clothes must be warm and of wool, preferably of a dark color that will harmonize with the ground. Shoes should be heavily studded with soft iron nails. Nothing else is safe for running around on the rocks above timber-line. On a pack train trip, where the hunter is constantly searching the timber-line with his eye, the dark color and size of a bear makes it easy to see at a distance, and if you do not see him well off, he is bound to see you and make away from that part of the country.

Grizzlies in the old days used to be hunted in Wyoming with hounds, just as Black Bear are in the South, and thrilling sport was made of it. The only drawback is the fact that it is a bit unfair to the bears and leads to their rapid extermination.

The best time of the year to secure a bear is in the spring, just at the end of the period of hibernation. In

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Alberta and British Columbia the Grizzly usually comes out between April 15 and May 1, depending upon the season. At this time, before the foliage is in bloom, they can be more easily seen where they are bound to be feeding above the timber-line. The guide will usually make camp in some valley where there are several slides favored by bears. Watch these slides each day with glasses until a bear is seen working upon it, and the rest should be easy.

The drawback in spring hunting is that one cannot shoot anything but bear at that time. Therefore, while there are not so many opportunities for seeing bear in the fall, I, personally, always prefer to take that sporting chance, in view of the fact that it presents a possibility of hunting various species in different localities, including caribou, sheep and moose. After all, a long trip into the cold mountains in the early spring, traveling hundreds, and perhaps thousands of miles, only to kill poor old Mr. Bruin while he is busily engaged getting a much needed breakfast, seems to me a rather futile occupation.



CHAPTER EIGHTEEN

Grouse Shooting in Scotland

WHEN I first went to Scotland to shoot grouse I had no delusions as to how easy it would be.

There were, in fact, several things in my favor. To begin with, almost the first birds I shot at, aside from a pheasant and a few sundry woodcock, were Scotch grouse, while doging with a kindly old keeper in August some thirty years ago. Secondly, I have done a great deal of driven pheasant shooting which, while different, gives one a fair idea of what to expect. And lastly, most of my shooting at home in the past few years has been with sportsmen who habitually shoot grouse abroad.

So I approached Inverness-shire with fear and trembling, for I knew what was in store for me. I was not under the spell of the delusion which so many of my countrymen have, that the shooting of these "hand reared" birds upon a preserve would be a cinch. I knew that they were no tamer or more hand reared than ruffed grouse in New England would be if some wealthy man or club syndicate were to acquire some thirty thousand acres for their own use.

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I have shot our friend Bob-White at his worst, and those who have shot these birds in the scrub oaks on Long Island and in the honeysuckles on the western shore of the Chesapeake, will know what that means. I have shot canvasback on one of the hardest passes on the continent in northern Saskatchewan. I know what jack-snipe are like on a windy day, and I have shot at ruffed grouse from Nova Scotia to Virginia.

So when I say that the driven Scotch grouse is so difficult that the others seem to me easy by comparison I want my readers to know that I am not voicing the enthusiastic opinion of one who has found a new sport, but the unanimous agreement of those men with whom I shot in Scotland who have also shot with me in these other places.

I still think that driven pheasant and ducks flying over a pass are difficult, but since my first shoot abroad I have had a chance to do both again, and my impression that the grouse is harder is substantiated to my satisfaction by the fact that they are both easier to me than they were before I went to the Highlands.

There are so many factors attendant on the difficulty of killing grouse that I am at a loss to know where to begin. The chief among them is, of course, the birds' phenomenal speed. I know of nothing that can remotely approach them in this respect. I have cast about for days to think of some way of describing adequately to my



GROUSE DRIVING IN SCOTLAND. THE MOST
DIFFICULT OF ALL WING SHOOTING



GROUSE SHOOTING OVER DOGS IN THE
HIGHLANDS OF SCOTLAND

readers how very hard is the shooting of these incoming birds.

The Skeet shooters of the country will best understand me when I ask them to consider driven grouse shooting as being like shooting the incoming bird from Number Eight position, with this added difficulty—instead of being a known angle it is a constantly varying angle.

All of you who have shot Skeet know how very fast this bird passes over. It is not an exaggeration to say that the grouse is quite as fast as the incoming clay pigeon twenty yards from the trap. If you were to set up a dozen traps shooting at various heights and angles, but all toward the gun, and pull them one after another so rapidly that the shooter could not get off a cartridge at more than one in three, you would have a fairly good picture of what driven grouse are like.

Most of us agree that it is difficult to break this bird after much practice. How many would you break if the trapper should one time pull a little bit too quickly and the next time balk? How many would you kill if the angle was constantly changed from fifteen degrees to the right of straight on overhead to fifteen or twenty degrees left? How many would you kill if you had to shoot at doubles at that range without turning around? Very few, I am sure. That is what driven grouse are like.

One of the biggest problems is that in almost every line of butts a man occupies he has a different terrain in

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front of him. Sometimes he is on a side hill sloping to the left, or again it will be to the right. Sometimes he is on a flat hilltop and again in a deep valley. Sometimes he is right on the crest of a hill and again he is over the shoulder so that the birds coming up in his face are not visible until they are almost on top of him. Sometimes he sees them two hundred and fifty to three hundred yards away and has to hold his fire until they are within range, and the grouse invariably suits his flight to the conditions of the ground. Unless the direction of the beat forces him to do so, the grouse very seldom crosses a valley from one hill to another. He is more apt to stick to the hillside and swing around the shoulder out of sight, just as ruffed grouse do. Normally he will fly about fifteen to twenty feet above the heather, but he will dip and dive with each undulation in the land, so that every time the position of your butt in relation to the surrounding terrain is changed the conditions under which you must shoot have also changed.

In the average butt a man does not get shots at more than three or four coveys and, perhaps, half a dozen singles, before the drive is over. He very frequently leaves that butt after a deplorable exhibition without having solved his problem. In battery shooting for ducks, or shooting from a pass, the shots would be so constantly the same in character that the same man would soon get on to it and know where to hold. In grouse shooting he

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goes on for days missing and missing and never being able to tell why.

Some of my friends who know that I can shoot fairly well on game have been amazed when I told them that on one afternoon while shooting with Mr. Andre Pillot on the Radona Moor at Inerliethan I fired twenty-three shells to kill three grouse on one drive. The wind was blowing a gale; it threatened almost to blow us off the side hill down into the loch in the valley. The birds came hurtling over our heads and were not in view for more than fifteen or twenty yards in front before they disappeared an equal distance in back of us. It was almost like shooting at the flash of a heliograph, and yet in a similar butt, Blackhouse Moor, on another day I killed nine straight and was high gun.

Another difficulty which one does not foresee is the constant menace of your fellow guns. Due to the speed of the grouse it is very difficult for the beginner to get on them far enough in front. If one dwells upon his aim for the slightest moment, before he can catch up with his bird he will be shooting very close to the line, and when one catches his neighbor's butt in the corner of his eye he will instinctively, out of consideration for him, slow the swing of his piece, with the inevitable result that he shoots behind. While shooting ducks from a pass, and driven pheasants, this factor has never entered into the problem of hitting, because almost inevitably one is

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aiming at such a high angle that there is no danger of hitting one's companion. With grouse flying low as they so frequently do in a rugged country like Inverness-shire, half of the time they will be against a background of heather and bracken, into which they melt with such matchless blending, that one actually has to strain his eyes to see them. I have never gone home from a day's duck shooting with the same tired feeling about the eyes that I have after shooting grouse. Nor do grouse flock together and fly in such close proximity to each other as ducks and other forms of game. In three seasons shooting in Scotland I never once killed two birds with one shot, either accidentally or by intent, nor did I ever observe anybody else do so.

Lord Lovatt's brother, Mr. Charles Ian Fraser, who is an excellent performer with the gun, told me that if a man could kill one grouse to two shells on the twelfth of August, and if he is a really good shot he should be able to do so, he would be doing very well if he killed one bird to five shells on the first of September. I know by experience that the same thing applies to canvasback. I have shot them in the middle of September on Lake Winnipeg before their pinions are fully grown, when actually some of them had great difficulty in getting off the water. Naturally, their flight, though fairly fast, was not nearly as speedy as the same bird's would be by the time he reached the Susquehanna Flats in October. The

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young grouse on the twelfth of August is weak on the wing by comparison with the tough old birds. He is also inexperienced, he is not afraid of the butts, but after he has been over them a half dozen times in August and the first part of September and arrived at his full strength, he is a very different bird indeed.

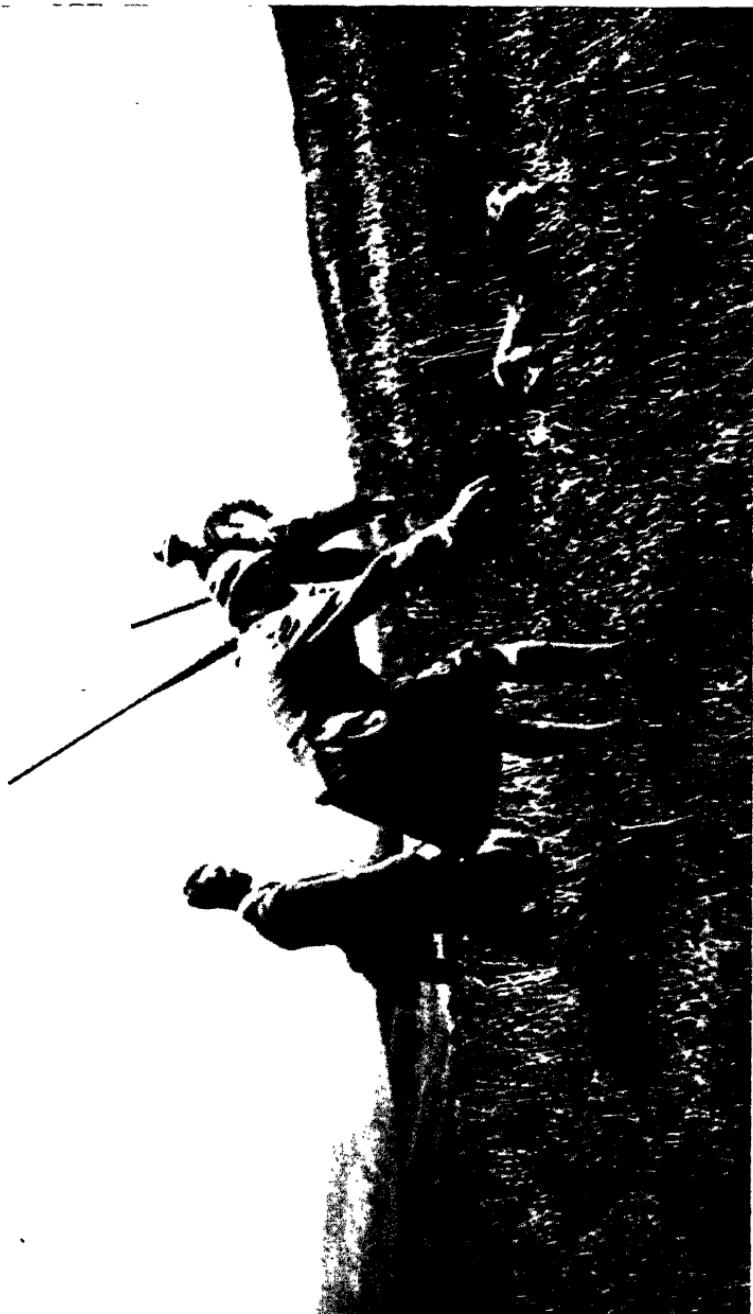
I asked Mr. Fraser what, if that was true of September, he would consider good shooting in October. That, he said, was anybody's guess—it might be one to sixteen shells; in fact, it is hardly worth while trying to shoot them. And my host, Mr. Charles Ogden, who is one of the best guns among the American Colony and who has been shooting in Scotland for the past thirty years, agreed to these figures. So when you read of the great bags of grouse that are sometimes made on Yorkshire Moors, it is well to have this picture in mind. It may be so, but at any rate, it was never done in Scotland. You must not confuse English grouse shooting in Yorkshire with Scottish grouse shooting. The Yorkshire Moors are as flat as a table and they sometimes double drive their birds. For instance, a group of beaters will start in on the left flank of the guns and another simultaneously on the right flank and drive the birds from both sides to the center. Then they will swing around to get in back of them and make a second drive, or I should possibly say a third drive, after the two simultaneous ones, and put them over to the guns. This packs all the birds into a small area.

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There are so many birds in Yorkshire and the moors are so flat that when double driving this way early in the season, a good gun will not have to shoot at everything that comes within his range. In fact, I am told that one man, who is considered by some people the best shot in the Empire, will refuse to take anything but a favorite shot; that is, a bird on his left side about thirty yards out. He will shoot at every bird that comes to that spot and he will not take his eye off it. He will refuse an easy bird on the other side of his butt.

That, to the Scotchman, does not constitute good shooting. It would be utterly impossible to shoot this way and still make a good bag on a moor that provided, we will say, two hundred brace a day.

The best advice that I secured from the Scotchmen with whom I was shooting was to size up the lay of the land as soon as you enter your butt and then pick out an object about thirty yards in front of it. It may be an outcropping of rock, a small but noticeable tuft of bracken or heather—it must be something that you can distinctly see without focusing upon it—and make up your mind to get off your first shot the minute the birds reach that range. In other words, when a bird is well outside that mark, about forty yards away, raise your gun quickly to the shoulder and snap shoot at him the minute he reaches it. Don't worry about shooting too soon for you will not be able to get on to him and pull the trigger before he has gone the



HIS GRACE, THE DUKE OF MONTROSE, ON A HIGHLAND MOOR

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intervening ten yards. And I would emphasize snap shoot, for if you dwell a moment on swinging in with your bird you are lost.

It is well also to make a mental note of two other objects in the foreground to each side of you. This is in case you do not have sticks put up above the walls of your butt to prevent you from shooting down the line. When you swing close to one of these sticks you are supposed to raise the muzzle of your gun if you have not shot it, turn around and shoot to the rear or turn as you pass back the gun and receive the second from your loader. Never, under any circumstances, must you shoot close to the sticks, and it is well to pick out markers of your own on each side of you. The necessity for this simple precaution will be readily understood.

It is well also to get in the habit of firing both barrels in front in the beginning, whether you are on your birds satisfactorily or not. Throw up your gun and if you know that you are not right get that cartridge off anyway, the minute the butt hits your shoulder. After doing this for a while you will get into the habit of shooting one, two, to the front and one, two, to the rear. You must sacrifice many shots to begin with if you intend to shoot in good form, and form counts more in grouse shooting than on any other game. Probably by plodding along, taking your time, and aiming carefully at one bird you would make a bigger bag to begin with, but if you once contract that

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habit it is my opinion that you are doomed to be a dub on driven game for the rest of your natural life.

One thing a gunner can do prior to the open season is go to a good English shooting school and practice with a loader, or, barring that, if he has some friend that has shot abroad he can get him to act as loader for him and practice exchanging a pair of guns. The funniest sight that I ever saw was a left-handed novice trying to exchange guns with a right-handed loader. They spent most of their time in an affectionate embrace, frantically endeavoring to swap guns.

And a word to the wise is not to pose as knowing more than you do. Place yourself in the hands of your loader, who has probably observed shots, good, bad and indifferent, for years and has become a keen judge of the right thing to do. If he cannot help you nobody can, and whether you shoot well or poorly, it is my experience that he will never complain and will always be encouraging.

I would like to observe that one hears a great deal in this country among people who have been there, and also in British sporting periodicals, about these gifted sportsmen who regularly kill their two in front and two behind. I would like to state that while I shot with some very excellent performers in Scotland in the three seasons I spent there, I never ran across one of these men. I seldom saw four birds killed with four shells from a single flight. I have done it but once and I believe I could count on

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the fingers of my two hands the number of occasions when I killed two in front and one behind, yet I am above the average performer. It slowly dawned upon me that this is possible, as referred to previously, on the Yorkshire Moors earlier in the season, but hardly a general thing in Scotland during September. The two in front and two in the rear on late grouse on a Highland moor is, so to speak, an ideal to aim at, which everybody strives for but mighty few attain.



CHAPTER NINETEEN

Deer Stalking in Scotland

ROUSE driving is over in the last week of September, so when the anxiously awaited message came down from the head keeper at Erchless that the stags were beginning to roar, we lost no time in taking to the hills.

The following morning saw our fat Highland ponies plodding through the dark Scotch firs toward the open forest. A deer forest, you should know, aside from being the home of the red deer which we were seeking, is not as in our parlance a forest at all. It would be almost as accurate to call the Sahara Desert a forest, for in Scotland, if there are trees on it, it ceases to be a forest and becomes a woods—that is just their way.

So far as I know, and I am anything but a botanist, there are three kinds of vegetation on a deer forest. There is the lichen which grows on the granite crags, there is the bracken, and there is the everlasting heather.

At any rate, stalking your stag means getting in range of a beast by taking advantage of every little depression in the rolling terrain, and the meager shelter afforded by

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the undergrowth which is from six inches to a foot high—and it takes a bit of conscientious doing.

When in the future I hear one of our hardy big game hunters scoff at the deer shooting of Scotland, I shall smile to myself in that superior way which is so annoying and think of Erchless, where I learned a bit about it. After all, this deprecating attitude is not surprising. The sport of the Highlands has always been a closed book to the average American nimrod, and his impressions of it, which are usually gained second hand, are swayed by his own rough and ready experiences in the Rockies or elsewhere.

Quite naturally he thinks of this so totally different pursuit as something quite ridiculous by comparison. Personally, when I look back over my years of stalking, and I shall think of them often, it will be as something which should be recorded in my shooting register in letters of gold.

It is true that one is lead out by a stalker and a couple of gillies for all the world like a little child being taken to the zoo to see the animals. They carry your unloaded rifle, the lunch kit, your macintosh (if you are lucky enough not to be wearing it) and anything else you elect to take along. They do all the spotting, select the beast which you are to kill, and guide you within shooting distance, in fact they do everything for you but walk and squeeze the trigger.

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As a matter of fact, is not that just what the guide does in the West? I have had my quota of sporting "North of the steel," and have found that to follow all day and let off a steady shot when the crucial moment arrives is quite a task at times. To do one's fifteen miles or more a day in the heather, probably crawling the last mile on one's stomach to get within fair range of a desirable stag, surrounded by a harem of ever watchful hinds—and then to drop him in his tracks in a swirling mist is as difficult a job as one requires to prove his prowess.

Yet, because one is aroused from his well-earned slumber in the most luxurious surroundings, by an obsequious servant who promptly hustles him into a tub and then into what would be his golf kit at home, then toys with a sumptuous breakfast of many covers before the car is called to take him back to the edge of the forest, people over here are inclined to think the whole affair is a sort of joke.

They seem to feel that it is all part of the game as played by the crowned heads of Europe, of which we used to see pictures, showing their Royal Highnesses standing beside a large pile of boar, roe-buck and what have you. Personally I am not inclined to think that it was all as easy as the inexperienced public like to believe. For sitting silently at a stand on a cold winter day, is none too easy in any country, but at any rate I know that

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to kill the Scotch stag, one has to work, even if most of the thinking is done for him.

I am aware that there are forests in some parts of the Highlands, where due to the rugged nature of the country and the abundance of the deer, which are held by artificial feeding, stalking is made absurdly easy. The rougher and more mountainous a country is, the simpler it is to take cover. The walking is more difficult, but the approach to the game is facilitated, and of course the more good heads a shoot carries, the easier it is to secure suitable trophies.

I had many striking examples of this while stalking on the Island of Arran from Brodick Castle with His Grace the Duke of Montrose. Arran's rugged hills and corries are about as difficult to get over as any part of the Rockies where I have hunted. In fact they would be quite as difficult were it not that their much lower altitude does not tax the heart and wind as badly.

Since the country is so very hilly with deep erosive scars cut into the slopes everywhere by the heavy rains, it is very easy to take cover and get within fair range of a good head. The deer of Arran are isolated from the main land by many miles of open salt water, so they may not wander off, and consequently the Duke's shoot holds an unusually large herd and providing one has the legs and the wind, it is not at all difficult to secure a good trophy.

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Coming as I did direct from four weeks in Inverness-shire, I was in top form and though I arrived on Arran at noon, I brought two very good stags to the larder before dark of the same day.

But this was not true of Erchless, which by comparison is a very small forest, consisting of some fourteen thousand acres, dumb-bell in shape, the major part of which is low hind ground. All through the summer one will see large bands of hinds and fawns upon it, but it is not until the rutting season that the stags come down from the higher adjoining land, which they prefer, to join their consorts.

As a result its long flat slopes and deep basins afforded me some of the most interesting and exciting sport that I have experienced with the rifle. There are many other difficulties to contend with besides the terrain, chief of which is the weather; Scotland is famous for its mists and fogs and it is seldom that one gets more than one or two good days at a time. When a thick fog comes up one stays home and if caught out, he gets home, if he can, for it is simply futile to stalk.

A slight mist may be a blessing or a curse; if it comes on after one has located game, it may make it possible to approach a beast which he could not otherwise reach. But if he is searching the hillsides the powerful telescope becomes quite useless, for it magnifies the mist as much as any object in the foreground. On the other hand, the

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weather may be perfect and one may locate a splendid beast and not be able to get near it, because some silly hind has taken it into her head to lie down for a rest on the only line of approach. I have crouched and shivered for the better part of a day, watching a fine head, only to be forced to go home at dark without a shot.

One of the simplest things is to find a suitable beast to shoot; it is then that the difficulties arise in trying to manœuvre so that the terrain, the wind and those everlasting hinds which one sees everywhere do not give the show away. So true is this that though no one would dream of killing a hind in the stalking season, he really finds himself stalking the ladies more often than their lords and masters in an effort to circumvent them.

Once one is on the open ground, the stalker's glasses are in constant use; there is no telling where the traveling stags may be; one that was here today may be twenty miles away tomorrow. There are no fences; dismiss from your mind the sleek complacent deer one sees in a park enclosure. The wild free stag of Inverness-shire and Ross-shire is a very different customer. To bolt a deer, be it hind or royal, is almost as bad as to miss one, for as it goes off, it is sure to alarm others and may start a stampede which will carry every head on the place over on to the next property. So every foot of the country must be carefully scanned with the glass as it unfolds itself before you. Even with the greatest care, and the aid of a power-

ful pair of binoculars, the novice will overlook more than half of the deer. By the middle of September the so-called bonnie purple heather has turned to a dun brown, into which the red deer blend with such matchless protective coloration that they are absorbed in the landscape. I have repeatedly gazed intently through my glasses at a hillside in the near distance and failed to notice a band of half a dozen hinds, which were quietly feeding in plain sight, until Frazier turned to me with a smile and his usual query, "Do you ken yon beasties, sir?"

Perhaps I might digress at this point to inform my readers what constitutes a shootable stag, for after all not every pair of horns one sees is considered legitimate game, as unfortunately is too often the case over here.

To put it into the words of my host, Hubert Litchfield, the stags of Scotland are divided into five classes: there is a "bonnie stag," a royal, or better, though it might include a very exceptional ten pointer (the royal being a twelve pointer). Next comes a "stag," that is a normal beast of ten points, weighing sixteen stone or so. Then comes the "staggie," eight point beast but shootable; lower down the scale is a "wee staggie," a little six pointer, but still shootable; and lastly there is a "sma wee staggie" and heaven help the fellow who shoots one by accident, for it will surely draw down the wrath of the keeper in most emphatic terms.

Usually the preliminary spotting is done by going to

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some high "knobbie" which commands as much of the forest as possible and lying there until a desirable beast is picked up in the glass, maybe a mile or two away. If it is decided to try for him probably another half hour must be spent in searching the foreground for other beasts which might make the stalk a fiasco.

At the end of an hour or more of patient searching I have had Frazier lay down his glass, clear his throat and say, "I see a beast." That was enough; it meant all sorts of things but principally that, despite the fact that it was better than a mile away, he had kept it in the narrow field of his scope until it had changed its position or turned its head so that he could tell what kind of antlers it carried.

"Where is it?" I would ask.

"Weel, it's rather deeficul't to describe, Captain, but do you ken yon bare spot atop the rocks on the wee knobbie to the left of the big burn? Weel, if you carry the glass doon aboot fifty feet below there is a dark shadow at the foot of the flat rock—and he lies there. Now! do you see, he just moved his head!" And he would get to his feet and close up the telescope, which was a sign that the stalk was begun.

It is this constant vigilance and unbound patience, together with their skill with rifle and telescope, which made the famous Regiment of Lovat Scouts, recruited from among the deer stalkers, the finest snipers in the World War.

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Probably one of the smallest wee persons in the world is the chap who has been conducted across a difficult piece of ground by his stalker, to within fair range of a fine stag and then proceeds to miss it.

But there is one crime worse still, that is to hit but fail to stop it; a missed stag means only one shot, which may or may not scare off a lot of other animals, but a wounded stag is one which all the laws of humanity demand should be promptly followed up no matter how many others you frighten in the process, and no matter how many shots you need to bring him to bag.

One does not necessarily disturb game by a single shot; I have frequently seen deer and moose lift their heads for a moment and stand listening and then go on feeding, but fire two shots and they are at attention on the first, locate the direction of the disturbance on the second and are off for other parts.

As a result there is no room for reckless shots in Scotland; the rifle is carried in the case unloaded from daylight till dark unless needed for immediate action. One might ask, but what if you come up over the brow of a hill and jump a stag, how could you shoot it? The answer is simple—you wouldn't; there is too much chance of wounding it and precipitating an otherwise unnecessary bombardment. Generally you would let such a beast go and if possible make a long stalk to it, if you knew where it had settled down.

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No, after the stalker has located a beast which, in his estimation, is suitable, and if it is a long way off, it may take him an hour to decide, he will talk it over with the gillie and plan the line of approach. If he succeeds in getting you up to within a couple of hundred yards of it and takes the rifle out of the case you may be sure that it is time enough to load, and usually one cartridge is all he will stuff in. For the stalker is your lord and master while you are out with him; what he says goes, from daylight till dark (if you are lucky enough to get home before dark so much the better), and no matter how many championships you may have won on the rifle range, if he ever lets you take a shot over two hundred yards it is a high compliment to your marksmanship.



CHAPTER TWENTY

Moose Hunting

MOOSE are more widely distributed over the northern part of America than any other species of big game, and it has been my privilege to hunt them in every section of Canada from Nova Scotia to British Columbia. I have hunted them on foot, from canoe and on horseback, and have killed them in cranberry bogs at tidewater and above timber-line in the Rockies. It naturally follows that I have had some unusual experiences with them, but unusual conditions are misleading. Generally speaking, moose are still hunted on foot or are shot coming to the call during the rut.

Both methods have their champions. Those who prefer calling say that it is infinitely more exciting and requires far greater skill. Personally, I cannot see the justice of this claim, unless the sportsman does his own calling which, with all due respect to the art, is not a very difficult thing to accomplish. Having called and killed my own moose on two occasions, I feel that I may be permitted to say that the skill of the caller has been greatly overrated.

The moose is not a very alert animal and, consequently, it is not as difficult to still hunt as the white tail deer. It



MOOSE KILLED BY THE AUTHOR IN ALBERTA

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is also less inclined to frequent the tangles and swales in which we encounter the deer. Its tracks are large and easy to follow and, except when traveling, it is usually found in the proximity of open water.

In many cases where I have stalked moose, and I have killed more than I can remember, I do not recall a single instance when they took alarm and escaped. No man who has hunted the white tail extensively could say as much.

Possibly my success was largely due to the fact that much of my early hunting was done in Nova Scotia where the guides are the most skilful trackers and callers in America. They are the best because they have to be. Nova Scotia is a scrub country of low, rocky ledges and bogs, where it is more difficult to hunt moose than in any other part of their habitat with which I am familiar. The population is denser and the moose are so persecuted that they are more wary of the hunter. All the world over one finds that where game is most plentiful the hunters are the least skilled. As a rule, it is difficult to get competent guides in a good game country. In Nova Scotia the guides are expert and shootable heads are scarce. In New Brunswick they are fair but moose are more plentiful. North of the steel in Quebec and Ontario, where good heads are still numerous, the guides are literally lumber-jacks whose only recommendation is that they know the woods. In many instances they have less hunting skill than the men they take out.

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The still hunter must, of course, vary his method to suit the country and the season of the year in which he seeks his quarry. Where the shooting season opens on the first of September, before the foliage is cut down by heavy frost, the hunting would be extremely difficult, were it not for the fact that, as the moose is a semi-aquatic beast, it haunts the shores of lakes and ponds where it can secure the lily-pads which it prefers and at the same time find relief in the water from the torment of the flies and mosquitoes. At this season it would do little good to stalk upon the ridges, for the moose are not there. They are invariably on low ground and the undergrowth is so thick that it would be difficult to see them. In consequence, one's hunting can, if conducted in a country of large lakes and streams like Quebec and Ontario, be limited to quietly paddling about in a canoe and examining carefully from a distance the back waters and flowages which they would be likely to frequent. But with the first heavy frosts, about the fifteenth of September, the antlers harden, the velvet strips off and the rutting bulls start traveling around the country in search of adventure. With the end of the rut, which is usually in the first week of October, the moose moves back into the deeper woods, the leaves fall off and stalking in the true sense begins. If I were asked to suggest the best time to still hunt moose, I would say from the first to the fifteenth of October. That is, if the sportsman wanted to make it as difficult as he

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could. All animals are on the alert when leaves are falling. At this period we usually get a long spell of fine, dry weather. In fact, in excessively dry seasons, it is almost impossible to still hunt until the rain comes to soften the dry leaves.

Many a good guide has been accused of laziness by an inexperienced sportsman, when actually his experience taught him that it would be useless to attempt to approach game, particularly when encumbered by another who, with the inexperience of the average city man, would naturally be noisy in the woods. When the forest floor is covered with crisp, brittle leaves, even such Indians as Fenimore Cooper's nimble mind conjured, could not steal upon game. I had one discouraging hunt back in 1924 on the Tobique River in New Brunswick with an excellent guide in good moose country, when we never laid eyes on a moose for nine solid days because it was so dry under foot.

The still hunter scouts the birch-covered ridges, where the moose wood, on which the animals brouse, abounds. He will pick up a fresh trail and follow it cautiously for a bit, to make sure of its general direction, and ascertain if the beast is traveling or just feeding nearby. Usually, it is not a long trail, as moose are inclined to frequent a comparatively small area, unless disturbed. He has to be extremely careful of the wind, as their noses are sensitive, and he must move quietly because of their sharp ears and

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suspicion of nearby noise. To illustrate, a moose will hear a shot or a woodchopper a mile away, prick up its ears for a moment and listen intently, then continue feeding, or lie down to rest, yet if a twig snaps it is instantly on the alert. On the other hand, like all woodland game, its eyes are not sharp.

The proper method of approach is to note the direction in which the moose is traveling or feeding and then cut back and circle below the wind in a forward direction, so as to cut the trail again with the wind in the stalker's face. If he does not cut it on a line with the point at which he first saw it, the quarry is in back of him and he has it definitely located. He may have to cut its track with circular interceptions several times before he locates or runs into it. The reason for this cautious approach is that the moose, like all game, will circle back to watch and listen from some vantage point to guard against anything on its trail. The moose invariably does this before it lies down to rest, and if the stalker goes straight ahead, it is certain to see, hear or smell him.

If possible, he will always hunt up wind and if, because of the terrain, this cannot be done, he will hunt across the wind so that he is at least protected on one side or the other. Both tracking and stalking are, of course, immeasurably easier on the snow. The only drawback is that the early snows are liable to be soft, wet ones, which in the cold nights may turn into a thin crust on top and with it

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breaking under the feet of the stalker, the party is off until it melts again; but on a light, tracking snow any child could follow the large spoor of a moose.

As intimated previously, in so far as the sportsman is concerned, calling, unless one acquires the skill to do it himself, is a very simple process. He has only to sit down like a good little boy beside his guide, rifle across his knee, and wait for what the gods may send him through the alluring invitation of the birch horn. The guide will select a likely hiding place on the shore of some lake or pond, or upon the edge of an open barren where the visibility is good over a large area. The hunter will approach it cautiously and usually call either in the early morning or at sundown. It is useless to call moose on a windy day, for any old bull who has survived long enough to carry a suitable trophy upon his brow, is certain to be too wary to approach without stealthily circling the caller to test the wind. Dawn is far better than dusk for calling, for if there is a bull in the neighborhood who is inclined to be cautious, he is apt to come more quickly, knowing that the longer he waits the lighter it will become. On the other hand, if he is called at dusk and has the slightest suspicions, he will not expose himself until protected by the shades of night.

Calling is confined almost entirely to Nova Scotia, New Brunswick and Quebec. The farther west one goes, the less is known about it, although the Indians of northern

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British Columbia use a method which is practically the same. Instead of mimicking the amorous whine of the cow, they rattle a shed moose antler against the bowl of a tree in imitation of the challenge of another bull.

None of the white trappers whom I encountered in Alberta had ever heard a moose called. In fact, one Indian, when he first heard me call from hiding, was quite excited and thought I was a moose.

Coming back from the great game country, north of the Smoky, I brought to the call and kill probably the first moose that had ever been lured in that part of Alberta. We had pitched our tent under ideal conditions within a mile of a large barren. The day was hot without a breath of air stirring, but there had been several frigid nights and I was sure that the rut had started. As we approached the scene of our endeavor we were not encouraged by a single fresh track so the demonstration was really made more as an exhibition to my guide than anything else. I improvised a horn from an old map and we sat down on a fallen tree on the edge of the barren. For an hour or two I called every fifteen or twenty minutes, which is about the interval allowed by the cow moose between calls. Twice we were encouraged by a suspicious sound on the far side of the barren, but it grew dusk and I was about to give up when the guide urged me to make one more try. Not expecting any results, but in a spirit of bravado, I roared out a tremendous bellow and folded

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my map, picked up the rifle and was prepared to start home when the guide excitedly seized my arm and pointed out into the barren. There, like a ghost, stood a mighty moose. The first glance disclosed that he was a splendid trophy and a well directed shot at two hundred yards laid him low.

In my opinion, moose are not as a rule difficult to kill. The vital area is a large target some eighteen inches square, comprising the heart, lungs and the shoulders. If one places his bullet in this spot, which barring undue excitement should be very easy for even a fair marksman, up to two hundred yards, the quarry should be downed. Of course, one should use an adequate weapon. For this purpose the .30-06 cartridge is supreme with the 7 m/m as a second choice. The moose is a heavy beast and deer rifles of the .30-30 type, while they have accounted for hundreds of thousands of moose, are really too small. In most instances it will require two or three shots to put them down permanently. In fact, in observing the use of the 7 m/m, I am inclined to believe that it is somewhat lacking in energy, yet out of fourteen moose which I have killed with the .30-06, nine were brought down with a single shot in the shoulder, at ranges from fifty to three hundred yards.

In my experience with moose I have found them dangerous only when wounded at very short range.



CHAPTER TWENTY-ONE

Sheep and Goat Hunting

OF ALL our known American game *Ovis Canadensis* stands supreme. The first moose affords a great thrill. What a trophy it is, with its mighty spread of antlers! There is greater excitement in the first encounter with a grizzly, but there is no game, generally speaking, that will tax the sportsman's patience, fortitude, physique, marksmanship and what we commonly and so expressively call "guts" as the Rocky Mountain Sheep. Whether you hunt him in the hot, sun-blistered lava crags of the southern California Peninsula, the high peaks of Wyoming and Alberta, or his kindred, the Stone and the Dall, in the lower altitude of the Sub-Arctic, it is the same—he is the first prize. This opinion is not merely personal enthusiasm. Big-game hunters of renown, who have shot the world over, from the jungle to the ice-fields, and who have even bagged the *Ovis Poli*, greatest of all sheep, consider the Rocky Mountain variety their ultima thule because of its wariness, the magnificence of the trophy, and the exquisite beauty of the country in which it is hunted.

The writer has had an intimate acquaintance with this



ALBERTA SHEEP COUNTRY
Note the stalker and guide in the foreground, and the band of sheep in the distance

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splendid animal in the garden spot of the sheep range on the eastern slope of the Rockies, between the Brazeau River and the North Smoky, an area of some two hundred and fifty miles from north to south.

It has been my good fortune to secure many splendid trophies, some of them under most unusual conditions. While I have never shot a sheep from the saddle, on one occasion I could have done so—a magnificent specimen of which any sportsman might be justly proud. Tediously climbing Kavass Pass with nine weary pack ponies toiling through the deep snow behind me, I approached the summit. A terrific three-day blizzard had blown itself out and the sun in all its northern brilliance again cast its cheery blessing over a fairyland of ice and snow. Suddenly my Indian pony snorted and stopped, and there, within one hundred and fifty yards of us, driven from his higher home, stood a mighty ram, with a complete curl of horn, gazing intently at us. I can still see the little spot of snow upon his muzzle and in the curl of his beautiful horns. Slowly he turned, looking back at us, climbed higher in the snow, which came to his shoulders, and watched us out of sight. As I think of that picture I am very glad that my license was filled and I had no right to take him, though he was a better sheep than the one which I was bringing out.

Upon another occasion, after having hunted sheep unsuccessfully for eight or nine days, and being entirely out

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of camp meat, I stalked to within thirty feet of a band of sheep and, selecting a barren ewe, dropped her with a carefully placed and quite merciful shot, while the rest of the band stood quietly by. Such killing is permitted for meat north of 55.

Sheep are not easily disturbed by the report of a gun. Thunder storms are quite common in the high Rockies and they *are* thunder storms. Sheep, in such country as I speak of, where they have been but little oppressed by man, commonly mistake the report for a clap of thunder, but they must not see the slightest movement before the shot is fired. It is said that sheep's eyes have a telescopic quality about equal to the human vision when aided by an eight-power binocular, and this I believe to be no exaggeration.

Once we made camp in a high, almost inaccessible valley, traveling some three days to make the last twenty-five miles by following the beds of streams. We pitched our tent in an ancient Indian camp ground that had apparently not been used for over thirty years, as the teepee poles had rotted away. When the ponies were unpacked and turned loose, my Cree guide and I made a short climb to a nearby spur, to have a look at the surrounding country before the light failed. As we neared the skyline he cautiously removed his Stetson, gazed into the expanse beyond for a moment, and then suddenly dropped back with an exclamation of caution.

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"What is it?" I asked, creeping to his side.

"Sheep!"

"Na-Moy-Ah?" (How many?)

"Ne-Tata-Upsio." (Many, very many.)

Slowly I raised my head, inch by inch, until the broad panorama was in view—and there—silhouetted against the roseate glow of the setting sun, was a band of rams. They were fully a mile away, every one of them looking fixedly in our direction. They had seen the slight movement of the Indian's head and shoulders above the rim.

Only by the use of a first-class pair of binoculars can one cope with the sheep's vision. At the same time they should not be too powerful. In the chapter on Field-Glasses I have discussed the use of binoculars and telescopes in sheep hunting.

The usual procedure in sheep hunting, if you do not know of some certain haunt where the animals are sure to be found, is to watch from the valleys, as you travel along with your pack train, for high basins in the mountains where lush green Alpine pastures show under the rim rock. When such country is found, you quietly make camp and prepare to spend a few days in the vicinity. Climbing up near timber line, the first thing to look for are the sheep trails on the slides and steep slopes of the opposite side of the valley. In almost every sheep country these trails are visible, like criss-cross pencil lines upon a pad, wherever the terrain is steep, and the sheep travel

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single file. Usually, after looking the country over carefully, sheep will come down to the grassy slopes to feed morning and evening. If in an unmolested country, they may stay down there, but more often they will return to the heights, where they have nothing to fear, except the eagles, to rest in the middle of the day and to sleep at night. In doing this, and in traveling about from one part of their favorite basin to another, they form these paths and one soon becomes adept in judging whether or not they are used without going a couple of miles to look at them. If they look faint they are not used and it is a safe bet that there are no sheep living in the vicinity, but if they show up distinct and dark against the natural color of the slide the surface has been cut by sharp little hoofs and the moister soil underneath exposed, indicating that sheep are in the vicinity.

Next question—are they ewes and lambs, or are they rams? If the former, there is no use looking further. Sheep are hunted in September and October. They do not run together until the rut starts in the deep snows of December. Until that time the desirable old rams remain aloof from the fretting mothers and their blatting offspring, like so many old gentlemen at their club. As a rule they will not stay in the same valley with the kindergarten; so when you find ewes, pack up and move a few miles, as it is a waste of time to remain.

If the selected valley turns out to be a ram pasture,

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the next step is to get as high as possible without being observed. Look over the terrain in front of you carefully and without disturbing any sheep, get as high as you can, lie down and scout all the surrounding country with your glasses. In any case, it is a time saver to get high—not only can you see more of the country, but in nearly every instance mountain game must be stalked from above. It is almost impossible to get within shooting distance from below, unobserved. They always watch the country beneath them, but seldom look up, not expecting danger from that direction.

Then, again, the uncertain winds of the mountains are often your undoing. With the prevailing wind full in your face you will frequently be unable to account for the sudden alarm of your quarry, unless you realize that an unsuspected eddy or side current has carried your scent to them. In most cases, however, these currents are upward, which is another reason for being above your game. The sheep, as a matter of fact, does not have a very good nose. It is not nearly as sensitive as that of the bear or the caribou, but, of course, one cannot take liberties with it, though he does not have to show as much respect for the wind with sheep as with any other species. Neither does one have to be extremely careful as to noise. In the first place, noises are quickly deadened in the high mountains, and little pieces of shale are constantly splitting off and tinkling down, due to the constant frosts at night.

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and the heat of the sun during the day; so a dislodged pebble is not likely to give you away. But noise also rises —another reason for being above your game. In fact, to get above it is the key-note of success in all mountain hunting,—that, and patience. You must scan every part of the terrain before going forward to look into the next gully. Sometimes this will take an hour of lying in a raw wind, after being wet through by a heart-breaking scramble up the steep slopes from below. Hence, the necessity for warm but light clothing. It must be of wool, if you are to have any comfort at all. The subject of clothing will be discussed more fully in a later chapter.

One can often sense whether a ram is desirable without getting close enough to be sure of the size of the horns. A really big ram is certain to have a complete curl of horn and, to my mind, the animal should not be touched unless the tips at least circle around in line with the bridge of the nose. My best sheep's horns come four inches above the nose, being $4\frac{1}{2}$ inches around the outside of the curl when killed, and the ram could not see at all to the side. Color is another indication. If you see rams and one of them is very much darker than the rest you may depend upon it that he is older and larger than the average. Both of these infallible indications are discernible at long range.

Speaking of range I have killed sheep from thirty yards up to over five hundred. But it is safe to say that the



A RECORD ALBERTA SHEEP SHOT BY THE AUTHOR
Spread, $26\frac{1}{2}$ in.; Base, $16\frac{3}{4}$ in.; Curl, $44\frac{1}{2}$ in.

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average shot is at around two hundred yards. This is long range for the ability of most sportsmen and bespeaks the need for a rifle of maximum accuracy and flat trajectory so that the minimum handicap is placed upon the hunter's ability to judge range and hold close. For this reason I would dismiss all lever action, slide action and automatic rifles, or others using medium power cartridges, and recommend the 7 m/m—270, or .30-06 cartridges as being the best, used in a bolt action rifle equipped with a peep sight. No one can score consistently under varying conditions at two hundred yards with open sight, nor has the average sportsman the skill to warrant the use of the telescope sight, which is the expert's equipment.

The goat is a very much simpler proposition.

One seldom hears of anyone going out expressly for the Rocky Mountain variety. Generally a goat is killed incidentally on a big game hunt, when the other trophies to be secured, as in Alberta, include mule deer, black and grizzly bear, moose, caribou and sheep. Of the lot, I certainly place the goat last both as a quarry and as a trophy.

There may be places like Idaho, the Coast Range of British Columbia and southern Alaska where people go expressly for them and in such precipitous mountains, they may be more difficult to approach, but in my experience on the British Columbia and Alberta border, in the main chain of the Rockies, while they range high, they

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certainly are not hard to stalk nor are they in any sense wary.

One does see them at times feeding on practically sheer cliffs, looking down hundreds of feet into nowhere, but who would follow them there? Probably an experienced Alpine climber could get to the same place but the goats would be gone. One could not approach them unseen and if one were to shoot, the trophy would be smashed to pulp in the void below.

I remember one day when we were searching for sheep in that great hunting country north of the Smoky, where all the waters run into the Athabaska and hence to the Arctic. Sitting down to rest, we spotted a nanny and two kids on just such a site. Fascinated, we watched them for over an hour, moving slowly along, feeding on a place which, through our glasses, looked as smooth as a brick wall.

Goats never appear to do anything quickly. The family observed us for a while and then quietly moved higher up the face of the cliff. They would weigh each step in advance. There was no turning back and they knew it. Nanny would look above and below and decide that it was a practical move, hunch up on a wee pinnacle with her four sturdy legs under her and then with a graceful bound spring on to another ledge, maybe five or six feet below or half as much higher, while the kids munched rock lichens and little tufts of whatever delicacy they

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found to suit their simple palates and scrambled after nanny when they got good and ready. Anyone who, in the name of sport, could have disturbed that happy little group deserved a life sentence. While the goat does not excite much enthusiasm in me as a quarry for my rifle, he has my whole-hearted admiration for his sturdy fortitude and adherence to the life he loves, up among the eagles.

My good fortune in securing a really unusual specimen of the species came about in the normal way. Nickerson and I were trotting upon an old sheep trail along the rim of a shale slide, some few thousand feet above our fly camp. I said that we were trotting but that would imply a disregard for heady places of which I was never guilty. Nick was doing all the trotting. I was probably taking steps like a cat on a wet pavement—all broken out in a cold sweat, despite the chill morning air, and studiously keeping my eyes off the valley far below. While mountain climbing fascinates and thrills me beyond anything else I have experienced, I probably never will learn to do it with comfort. I am just naturally scared to death half the time that I am out and crawl about with my heart where my Adam's apple belongs. Just as I was about ready to cry "Halt!" Nick stooped and sat down. I hunched up beside him and he took my glasses. Far across the valley and below us on the opposite slope, a white something glistened in the clear atmosphere. After a steady look at it Nick grunted "Rock I guess," and went on carefully

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searching the slope with the glass, as is the custom of all good stalkers. There is no use in sweeping the whole countryside in a glance as the novice does. One can see such great distances in the Northwest that trophies which you may have traveled thousands of miles to secure often appear like specks in the distance. One must mentally divide the country into squares and search every nook and cranny of each square with the glass before beginning on the next one. Every suspicious stump, rock or shadow must be given close attention.

This takes time, so I sat patiently drinking in the landscape. In the center of the valley at our feet nestled a miniature lake which reflected the blue of the sky with a gleam of sapphire. Above the dark line of the firs, the lush green of the high sheep pastures fairly sang of peace and plenty, while above that the ramparts of the rimrock changed from violet to orange in a weirdly fascinating way as the shadows rolled across them from the billowing clouds overhead. I cannot describe such a panorama. I had better stick to goats.

Nick stirred beside me. "Let's go shoot that white rock," he said with a grin.

"Is it a goat?"

"Well, if it isn't, it's an equally interesting rock, because it's moved about fifty feet since I've been looking at it."

"Oh, thunder with it!" I countered. "It took us an

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hour and a half to climb up here and I want sheep. We'll get another goat."

Nick looked at his dancing rock for a while and, reaching a decision, stood up. "Come on," he said, "don't be so lazy. There are no sheep on this range but ewes and lambs. That goat's all alone which indicates that he is an old billy. Nannies and kids generally herd in flocks. Besides, he looks big—let's go and collect him. It's on our way to camp. Then we can pack the ponies and go through Dry Canyon tonight."

Away we started and to reach the valley from which it cost such labors to ascend, was a matter of minutes. We raced down that slide, then up the heart-breaking opposite slope. Reaching timber-line, we proceeded more cautiously and after crawling to the top of a saddle, saw our billy lying down about five hundred yards away. We slipped behind another saddle and worked forward to within three hundred yards of him, at which range he was an easy target from the prone position, for he was a big chap and snow white against the blue shale in which he had been wallowing.

Nick observed with the glass while I fired and we both saw the shale fly up behind the goat. This caused him to think I was shooting high and he cautioned me to hold lower but I knew the range and my sight setting and felt sure that if it was a wild shot, it was due to a poor hold or a faulty cartridge, which is rare. Holding, as I had

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before, I fired and again Nick cautioned me. I fired four shots and aimed at the same place each time and each time we saw the shale fly up behind him. At the fourth shot the goat, which had not moved during the bombardment, toppled over, and afterward we easily found the four shot holes, which could be covered with the palm of one's hand. We had seen the bullets hit the shale after they had passed completely through him.

This is an excellent illustration of the value of having confidence in your marksmanship and knowing the trajectory and sighting of your rifle. Had I taken the guide's advice, I would have missed with the other shots. Probably the old fellow was too wounded to move after the first one, but one never knows with a goat, for there is nothing so hard to put down and keep there, not excepting the grizzly. They are so phlegmatic that they will take a great deal of punishment before they succumb.

While not a record, I would say that this old billy was easily one goat in a thousand. He weighed about 350 pounds and his horn measurements were ten and one-quarter inches in length, and any goat with horns over nine and a half inches in length is considered good.

On another occasion I ran into a goat while on horseback in a high pass and while I did not shoot from the saddle, I could easily have done so. On still another occasion I crept up to within five yards of one, lying down, and killed him with a .44-40 Colt. Again while hunting

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mountain caribou, which range very high in October, I spotted a band of about thirty goats far below us on the edge of the timber. It was no trick at all to slip down to within easy range and select two specimens which we wanted. This, in my experience, is quite typical of goat shooting. Time after time while hunting for other species, particularly sheep, I have come across bands of goats feeding in some high mountain basin, far below me, and usually they will not start to get out of the way until you are within four or five hundred yards of them. Their eyes apparently are not nearly as keen as those of the sheep, and they are a great deal slower. When alarmed their one idea is to get higher and they go away at a lumbering pace which will take them slowly but surely away from you.

They are the easiest of all game to hit because of their color, which makes them a clearly defined mark, and because they are so leisurely in their movements. They are less likely to move off from the point where you spotted them before you can make a stalk and get in range.

On the other hand, both sheep and caribou are subject to sudden and unreasonable alarms. One will observe a band of caribou quietly feeding and suddenly they will throw up their heads and dash wildly off for a mile or more. Sheep also will frequently move off while one is on a long stalk. When you get near where they were, they are out of sight or have moved over on to your flank

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where they either get your wind or see you and are on their way, but the poor old goat once seen is as good as in the bag, unless you persist in trying to get a certain one in some inaccessible place.

Personally, I think the necessity of doing this has been grossly exaggerated. After all, even a goat has to eat sometimes and there is not much to be had up in the pinnacles. Like the sheep, he comes down to the high pastures night and morning. It is only in the middle of the day that he goes up high to mooch around and peer down, pondering on the wickedness of the world like some old philosopher.

Of course, the chap that cannot shoot with at least a fair degree of accuracy will experience quite a little trouble with goats. Also, he may have a guide lacking in the skill necessary to get him into short range, and it is surprising how many of these there are. No matter what else may be said against Indian guides as compared with white ones, in this respect they excel. Being in most instances poor shots themselves, they are perforce superb stalkers, and for this reason I would recommend them to the man who, knowing himself to be a poor shot, considers success before comfort.

Speaking of comfort, as the novice will have to use his hands almost as much as his feet, a pair of cowman's raw-hide gloves are indispensable to protect his hands from the sharp shale.



ROCKY MOUNTAIN GOAT

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In the pocket you will need a silk handkerchief for wiping the glasses, two extra clips of cartridges (that is enough for one day with what is in the rifle), a folding hunting knife (it is lighter and cannot be fallen upon like a sheath knife), a compass (and learn something about it first), a water-proof match box (and be careful where you throw the matches), and a bar of chocolate. There is nothing comparable to chocolate as a bracer; it does not require water and is heating as well as nourishing.

Beware of too much water. It cuts the wind, and mountain rills are so cold that it may give you cramps. Do not try to show off and cross bad places if your guide warns you against them. It may look all right to you but he should know best. I knew two men that did—one went home on a stretcher and the other is in a shroud.

Don't shoot over a hundred yards with open sights, over two hundred yards with a peep sight, or over three hundred yards with a telescope sight. Don't shoot at all unless you can clearly see the foreshoulder and then, as the old Scottish deer stalkers taught me to do, bring your sight up the leg and when it touches the low line of the body right at the armpit let it off. Almost everyone hits his game too high. The heart lies upon the ribs and if you miss that you are at least sure to break the shoulder. Don't stay up on top too late. When it is light where you are, it may be pitch dark below and you will find the rocks uncomfortably hard and cold for sleeping.



CHAPTER TWENTY-TWO

Choosing the Pistol

PISTOLS are divided into three types—single shots, revolvers and automatics. They are bought with one of four or a combination of four purposes in mind, namely, target shooting, self-defense, offense and sporting use on small or medium game.

The pistol buyer who is interested in target shooting is very much in the minority. The average pistol is bought solely with the idea of having it on hand for self-defense, and the skill of the owner is in most instances highly superficial. Of all firearms, probably the pistol and its proper use is the least known, yet proficiency with it is the most difficult to attain. We find a great many wing shots and an astounding number of good rifle shots for every good pistol shot. This will be taken up properly in the succeeding chapter. It is sufficient to observe here that it is ignorance and lack of familiarity with the pistol that is responsible for the wrong type of weapon being bought by the vast majority of people.

For the beginner the .22 should be the first choice. Good pistol shooting is extremely difficult because one

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has only one hand to hold the gun and, as a result, the recoil is more severe, the hold is very much more unsteady, the sighting plane is very short—usually not more than six inches, and the shooting is generally done entirely offhand from the standing position without the aid of any rest or support.

In rifle shooting one has a weapon which is heavier and consequently steadier, with a sighting plane usually of eighteen inches or more, has two hands to support the gun, and most of his shooting will be done either sitting, kneeling or prone, in any of which positions he can hold the piece steadier. Any rifle shot with a certain degree of accomplishment should be able to keep all his shots from a prone position in a four-inch group at one hundred yards, but it will be long before the novice with the pistol will be able to keep his shots in an eight-inch group at fifty yards.

The greatest difficulty to be met, other than the short sighting plane, is in the trigger squeeze. One is much more apt to flinch with the pistol or revolver because of its greater recoil, additional muzzle blast, and louder report. It takes a higher degree of nerve control, and for this reason consistent and persistent practice with the .22, particularly the .22 short cartridge, is a prime necessity if any degree of accuracy is to be attained. Though this accuracy can be acquired while using solely the full service loads in the larger revolvers and automatics, it

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will be at the expense of patience and a great deal larger outlay of money for the more costly ammunition.

Another point for consideration in selecting the pistol for the novice is the factor of safety. Obviously such a short weapon, used with one hand, is infinitely more dangerous to the user and to onlookers than a two-handed weapon over which he has greater control and which renders it more difficult for him to get a part of his personal anatomy in line with the muzzle.

A consideration of these facts, together with the many available uses for the arm and the confusing number of different models on the market, would lead one to believe that the selection of a pistol is a rather difficult problem to solve. As a matter of fact, very few of the great number of revolvers and pistols on the market are worthy of serious consideration, and my readers, I am sure, will pardon me if I give thought to only those which in my opinion are the best.

Having in mind its mild recoil, extreme accuracy, economical ammunition and light report, I would, of course, name for the beginner a single shot .22. As the average man or boy would not want to begin with and possibly could not afford a weapon of the first quality, I would suggest as being unequaled for a beginner's weapon, that splendid little arm, the Stevens Offhand Pistol, with a six-inch barrel.

It has a very good adjustable rear sight, an excellent

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trigger pull, extremely good balance, a bead front sight, and is very well finished throughout. None of the other cheap .22 calibre revolvers can be compared with it. If one can afford, or at a later date feels he is warranted in securing a finer single shot weapon solely for target shooting, there is for his consideration the new Smith and Wesson straight line .22 single shot, and another, which in my opinion is superior to it, the Colt Camp Perry model. This weapon has an eight-inch barrel, weighs 34½ ounces, has sights adjustable for both elevation and windage, a superior trigger pull and the splendid finish and fitting throughout of all Colt arms. The price, while high, is fully compensated for in the value received.

My choice of a pistol for the beginner would be practically confined to these two single shot weapons, using the long rifle Lesmoke cartridge. A short cartridge can be used in either of them, but as I have explained in the chapter on the .22 rifle, the continued use of short cartridges in a long chamber permits a certain amount of gas leakage around the base of the bullet, which actively increases erosion and ultimately results in the chamber becoming roughened at the forward end so that the shells will not extract properly.

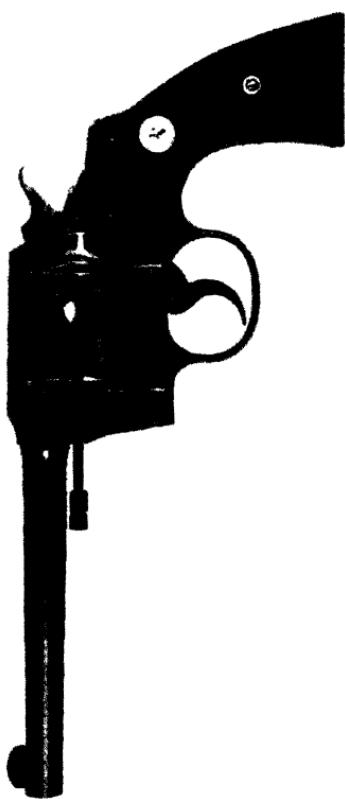
If the indoor target shooter reaches the expert class where he is in a position to choose for himself, he might have a preference for one of those marvelous Tell or Luna pistols produced by Ernst Buchel on the Continent.

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But the average man would think twice before paying the price demanded for a special instrument of this kind.

Certainly until such a time as he has gained complete knowledge of the safe use of his weapon, the shooter should not have a repeating weapon of any kind. When he has acquired the necessary skill, he can safely confine his choice of a revolver or automatic to two types. If a revolver, I would suggest the new Smith and Wesson model K22—a six shot target weapon with an accuracy capable of $1\frac{1}{2}$ inch groups from a machine rest at 50 yards, weighing 35 ounces, with a superb pull and the inimitable Smith and Wesson finish, specially designed for use with the new hi-velocity .22 ammunition and provided with counter-sunk chambers so that there is no possibility of the shooter receiving a wound in the hand from the giving away of the cartridge head where it is exposed between the head of the cylinder and the recoil plate of the frame.

An equally desirable arm, in my opinion is the Colt Officers model target revolver bored for the .22 cartridge. Should he prefer an automatic, there are for consideration two Colts—the original Woodsman model—a superbly balanced weapon which, though possibly too light for serious target shooting, has given a very excellent account of itself, and the new Colt Ace,—the Colt Government model .45 calibre, redesigned to operate the .22 cartridge. With the exception of the Buchel pistol, in my opinion



COLT .22 OFFICIAL POLICE MODEL PISTOL.

COLT .22 OFFICERS' MODEL PISTOL.

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there is nothing made in Europe or elsewhere that will compare with these guns.

In buying a weapon for self-defense, one must consider under what conditions the arm is likely to be used the most. If one requires a pistol for the pocket to be concealed upon the person, the Colt .380 automatic is, in my opinion, quite in a class by itself. There are those who will prefer a revolver and for such I would recommend the Colt Detective Special,—which is a .38 Special Colt with a barrel cut down to two inches and weighing but 21 ounces. Despite its stubbiness it is surprising with what accuracy this gun will shoot and it can be easily carried in the pocket. But, due to its cylinder, any revolver is more apt than an automatic to catch in the clothing if one attempts to shoot it from the pocket in an emergency.

Obviously the gun for the civilian who must carry one upon his person at all times must be light. A certain amount of power must be sacrificed. Few men would want to undergo the discomfort of wearing a shoulder or belt holster to carry a more bulky weapon beneath their coat. The detective, of course, should do so. He is far more apt to need his gun and, as an officer of the law, he must accept the responsibility of using it at any time. He should have one of sufficient power to protect his own life and that of others despite any odds with which it might be necessary for him to contend.

The average man, however, in buying a revolver is not

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going to carry it around with him day and night. He wants one to have in the house, where it will probably remain in a bureau drawer from one year to the next, or to be occasionally slipped in the side pocket of his car or his overcoat when he believes he might need it. In either instance, weight counts. For such a man the best gun is emphatically a .38 Special Colt or a Smith and Wesson .38 military model, shooting the same cartridge.

It will be noted that in all instances I have recommended the solid frame revolvers with swing out cylinders. The old type with the hinged frame breaking open to eject the shells was all right in the days of black powder but it is an obsolete type of weapon, the manufacture of which should have been long since discontinued. The householder will probably say, "Why should I bother with such a powerful weapon? I will probably never use it." One might just as well ask, "Why buy fire insurance? My house will probably never burn down." The fact of the matter is if the house does burn down, you could not have too much insurance, and if you ever have an emergency in which you need a revolver, there is none made so powerful that you would not be thankful for its additional punch.

If I were a peace officer I would confine my choice, dependent upon whether I preferred a revolver or an automatic, to either the .38 Super Colt automatic developing a muzzle energy of 490 pounds or the Smith and

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Wesson revolver for the .38-44 cartridge developing 445 pounds muzzle energy (the latter being an improved version of the old .38 Special). In velocity, energy and penetration these loads stand supreme today and are bound to succeed in favor the time-honored .44 and .45. The police courts are filled with records of officers who have shot first with a light pistol and wounded a criminal, only to be killed afterward by their opponent who quickly recovered from the shock of their puny weapons and inflicted a deadly blow with his heavier ordnance.

I feel that the .38 Special is amply powerful for the average man. Due to its rather mild recoil, he can shoot more accurately with it than with a larger cartridge having a heavier recoil, and for the same reason his wife or any other feminine member of his family can more capably defend herself with it in an emergency. He is more apt to practice with it occasionally because it is less expensive to operate and less objectionable to his nerves and ears. And occasional practice of this sort is very important.

The fourth reason for which the revolver or pistol is required is in connection with our field sport, and I have no doubt that most of my readers will be extremely surprised by the statement that the hunter has practically no occasion to carry anything but a .22 single shot pistol. The big-game hunter who goes out into the woods armed with a rifle, and carrying a ponderous Colt belted around

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his waist, cowboy fashion, immediately stamps himself as a tyro in the eyes of every old-timer whom he encounters. They know that a man armed with a rifle has no practical need for a defensive pistol.

In the first place, while the weapon is picturesque to wear it is a fearful burden. Unlike the cow-puncher the hunter is not in the saddle all day—at least not if he is a skilful hunter and is really serious about his business. The broad belt upon which the pistol is carried sags down over the hips and soon causes such soreness that walking may become almost painful. If in addition to the weight of the gun, he has the belt studded with cartridges, he doubles the burden. It represents another gun to be cleaned when one gets home at night; tired and with everything upon him and about him soaking wet, and for what purpose would the hunter use it? If it is large enough for self-defense, it would blow to pieces the occasional partridge or rabbit or mountain grouse he might encounter, which might be suitable for the pot. Every time he shot it, he would announce his presence to every game animal within a radius of a few miles.

If he is hunting with a rifle or a shotgun, there is no reasonable excuse to carry the pistol for self-defense. If an emergency should arise such as we read about in story books, where the rifle jams or the last shell has been expended in the face of charging game at close quarters, there is no man who could shoot accurately enough to be

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sure of saving his life with the most powerful revolver or pistol that has ever been made—that being the .38 Super Colt. When we consider that this cartridge has a muzzle velocity of only 490 pounds, which is trebled by the .25-35 that most people consider lacking in power for deer and black bear and only one-sixth as powerful as the .30-06, we can readily see that there is little chance of stopping a charging grizzly or moose with a pistol.

Modern rifles and ammunition are so well made that they almost never jam. We cannot hope to have revolvers or automatic pistols that would remotely compare with modern rifle cartridges in energy because no man has the strength in his right arm and wrist to support the recoil that they would generate. A hunter so inept as to expend every cartridge in his rifle without stopping his quarry could never, except by the intercession of a miracle, succeed in doing so with the less accurate revolver.

Add to this the crowning factor that there is practically no such thing as dangerous game on the North American Continent (nine times out of ten even the wounded grizzly will run like a frightened rabbit), and we must assert that there is absolutely no need for a heavy calibre revolver in the equipment of the modern hunter. What he does require is a little single shot light weight, .22 calibre pistol such as the Stevens Offhand model referred to above. With its mild recoil, using a short cartridge, its use will not disturb the surrounding country to any ap-

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preciable extent and with it the hunter can shoot accurately enough to kill an occasional rabbit or partridge and thereby add a nice change of diet to his menu. In addition this gun is inexpensive enough to be ignored in so far as care of it is concerned when the hunter feels too tired to give it proper attention.

The mountain prospector or explorer in the far north, the range rider—and there are still, in some remote sections of the continent, open range where the cow-puncher can ride from sunrise to sunset without encountering the infernal barbed wire—still have a use for the traditional Colt belt gun. These men do not carry rifles. They need a revolver with which to kill a marauding coyote if they happen to get close upon it unawares, or to destroy a cow, a calf or a horse that had fallen and broken a leg, for occasional signaling and also possibly even for self-defense. They require a gun lighter than a rifle and of easy access, and the revolver still solves the problem.

For the mounted man I would say that when he requires a large calibre one hand gun, he should never consider anything but the old standby,—a single action Colt Frontier .45. While in the service I had active demonstration of the fact that the automatic pistol as issued to our cavalry, though a splendid arm, is an extremely dangerous gun in the hands of an inexperienced horseman. If he pulls the gun and shoots from the saddle, the horse will generally flinch, frequently rear and buck or plunge.

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As the rider instinctively seizes his reins with his pistol hand in support of the left, he may inadvertently squeeze the trigger again, possibly driving a ball through the withers of his horse or into the leg of a companion. I have seen both accidents occur through the use of the automatic by mounted men.

One of the outstanding reasons why the single action Colt is still the best gun for the frontiersman, mounted or on foot, is the fact that it is so simple in construction and that it is almost impossible to break it down beyond use. Provided the firing pin, cylinder, and mainspring remain intact it will still function with many of its minor parts broken. It is the most powerful single shotgun ever made. Furthermore, after a shot it cannot be fired again until it has been recocked, hence it is impossible to shoot a horse or companion under the conditions described above.

This should not be misconstrued as a condemnation of the automatic principle. For the military man or the peace officer, it is my opinion that the automatic (Service Model either .38 Super or .45 cal.) is the greatest fighting gun ever developed. It proved itself in France despite the adverse criticism of a few who did not properly understand it. While in the service, as an Instructor with the automatic and Captain of the Ordnance Officers' Pistol Team in 1918, I fired some 4,000 rounds from a Colt automatic in practice with but two misfunctions,

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both caused by faulty ammunition. Despite the prejudice which many men still feel against the automatic, this gun has definitely passed beyond the experimental stage and is today as reliable in an emergency as any hand-operated revolver.

No chapter on the pistol would be complete without including a warning to my readers regarding the spurious arms with which this country has been flooded since the war,—particularly from Spain and Germany. The Spaniards are marvelous imitators and for some reason have always specialized in imitating Colt and Smith and Wesson revolvers. Save actually putting upon their guns the name Colt Mfg. Company, Hartford, Conn., or Smith and Wesson, Springfield, Mass., they copy the genuine pieces sometimes in every essential detail, and, from external appearance, the imitations seem to be just as good.

Many of these spurious guns, however, are bought by unscrupulous dealers for \$5.00 or \$6.00 each. They are brought into this country and marketed for from \$12.00 to \$15.00 as great bargains and as a matter of fact, are, in most instances, dangerous to the user. Where not dangerous, they invariably develop flaws in construction which render them totally lacking in accuracy, or springs and other poorly annealed parts break down. There are few things more expensive than a cheap revolver.

According to the terms of the Armistice, our opponents were required to do away with practically all their small



SMITH AND WESSON K .22, OUTDOORSMAN'S REVOLVER. CAL. .22 L.R.

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arms. Much of this material, though destroyed for military use, was recovered. German Mauser and Luger Pistols and Mauser rifles of which the barrels and actions were remaining, were refurbished, reblued, fitted with new grips and poured into this country. The genuine Luger automatic pistol cannot be bought in the United States today from accredited dealers for less than \$50.00 and the military Mausers cost \$58.00, yet one can go into any small city and find a Luger for \$15.00. The answer is obvious.

Aside from these imitations, I would suggest in no uncertain terms that there never was any firm or country across the Atlantic which could produce hand guns remotely comparable with the two world's recognized standards—the Colt and the Smith and Wesson. The revolvers produced in England and on the Continent, other than the Spanish imitations of our American guns, are so clumsy and ugly that they simply will not bear favorable comparison. The automatics, though born there, have not developed as they have in this country under the skilful hand of John M. Browning, who produced the various Colt models. The best of them is the Luger. It is complicated in construction. The trigger pulls are atrocious, the sights are very poor, and the sighting plane is obscured by the functioning of the action in fire.

America stands supreme in the manufacture of pistols and revolvers.



CHAPTER TWENTY-THREE

Pistol Shooting

AS WAS said there is ample reason for the fact that while we see many fairly good rifle and shotgun shooters, we seldom encounter one who could be called even passable with the pistol and revolver. Nevertheless, it is encouraging to note that rare as good pistol shots are, their number has been increasing noticeably in the past few years. Not only are the members of our military and civil establishments devoting more time to practice with the hand gun, but bank clerks, messengers and others in responsible positions are recognizing the need of such practice to combat the crime wave which has engulfed the country.

I have stated in the preceding chapter on the selection of the pistol that the novice should in every case be started with a .22 calibre single shot of the target variety. He should begin by learning the proper stance from one capable of coaching and then devote considerable time to what is known among the target shooters as dry practice. This means setting up a target at reasonable range and sighting and snapping an empty pistol at it, being

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careful to squeeze off the trigger steadily while holding the sights as near the black as possible. The shooter should try also to keep the sight aligned as closely as he can with the bull after the hammer has fallen, and to call each shot. That is, he should try to name the spot on the target where the sights were aligned at the click of the action.

Bear in mind that it is humanly impossible to hold the sights steadily on the target, without tremor, much less to hold them there as the hammer falls, whether the arm is snapped dry or with a live cartridge in the chamber. But proficient pistol shooting depends upon doing so as nearly as possible, and the best shot is the one who can release the hammer with the least effect upon the aim from vibration. He is not of necessity the one who can hold the steadiest on the target, though this ability is a great advantage. Nevertheless, some of the best pistol shots whom I have known, lacking the ability, made no pretense of doing so, but depended solely upon letting off the shot at the precise moment when the sights, which were properly aligned, swung across the bull.

In other words, they depended on proper timing rather than steady holding. Shooting in this manner the sights are aligned as the pistol is raised and pointed at the target. Having attained the proper elevation, the pistol hand is permitted to swing from side to side, pendulum fashion, and timing the trigger squeeze to the swing, the shot

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is let off so that the hammer falls on the primer just as the sights swing into the bull.

In fact, it is not too much to say that despite the fact that they strive for the utmost steadiness, which enables them to diminish the swing to a minimum, all pistol experts time their shots.

To attain this steadiness of hold, the firing position assumed should, to a great extent, depend upon the stance which affords the most comfort and the least strain to the shooter, for if the position is off balance one cannot hold steadily, and if it is strained or tense the vibration of the body is increased. The position should therefore be upright, the body being well poised upon both feet, for if one leans forward or back, the position becomes difficult to hold. The pistol hand should be raised to a line with the eye, rather than the head lowered to catch the sights. The feet should be set fairly well apart so as to take the strain off the extended arm and absorb recoil.

Some good shots aim with the arm fully extended, while others prefer to shoot with it slightly crooked. It should not be shortened too much, however, or the sights are too close to the eye and the arm unsteady. Personally, I prefer the full extended arm and recommend it to others, but I do not mean that it should be held rigidly. This is fatal to accuracy.

Some face squarely toward the target, while others prefer to stand sideways, looking over the right shoulder.

PISTOL SHOOTING

While either is permissible, the latter is a relic of the old dueling days, when a man endeavored to present the smallest possible portion of his body toward his adversary. But, even among the experts of the code duello, the advisability of this position was an open question, for if one was hit, a shot transfixing the body was much more deadly than one passing through from front to back. Not only did the latter make a smaller wound, but there was less chance of its lodging in a vital organ.

From our present day viewpoint, I condemn the dueling position as imposing greater strain upon the pistol arm. Hold a weight in the fully extended right hand, first to the side and then to the front and it will be found that it requires less effort to hold it in front, as it is not so far from the body and less leverage is exerted at the extremity. I prefer the extended arm for to me it seems steadier, but it must be admitted that it requires more effort for a long-armed man than for a short one.

It is very important to practice deep breathing and acquire the habit of fully inflating the lungs just as the pistol is raised to the firing position, exhaling part of the breath and then holding until the trigger is released. This tends to steady the hold. Remember that if the shot is not let off before the effort to hold the breath becomes uncomfortable, it has been held too long. The shooter should then lower the arm and completely relax for a moment before trying again. When the position is held

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too long, the heart begins to pound, the arm becomes shaky, and the eyes tire, all of which is detrimental to accuracy. The shooter should learn to get off the shot the first time the sights line up with the target.

The grip of the gun is most important and must be uniform. One may acquire a poor or a good way of holding a pistol, but whatever your peculiarity is, stick to it, if it is not detrimental to good scores. If one holds the grip low down for one shot, and crowds it, as the expression is, the next time, with the trigger finger wrapped around the trigger one time and just pressing it with the finger tip the next, he might as well give up practice.

The proper hold is attained by crowding the gun, enclosing as much of the grip as possible in the hand. The thumb should not be permitted to drop low upon the left side of the stock but be carried in a line parallel to the trigger finger and the barrel. The index finger should be well curved around the trigger so that the pressure is brought upon it by the second joint, squeezing directly to the rear. When only the tip of the finger engages the trigger, the pressure is uneven and usually to the side, tending to turn the muzzle away from the straight line.

The pistol should not be grasped tightly, which increases vibration, but with just sufficient pressure to hold it steadily. Pressure should be brought against the trigger not merely by the index finger but by a squeezing of the whole hand, as if one were squeezing a lemon. It makes

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THERE, LIKE A GHOST, STOOD A MIGHTY MOOSE

PISTOL SHOOTING

little difference what one does with the left arm so long as it is always carried in the same position. Put the hand in the trouser pocket, rest it on the hip, or let it hang straight down at the side with the palm pressed against the left thigh, but place it in the same position every time.

Get a definite picture in the mind of just how the sight and the target should look when they are lined up together. Assuming that the sights have been properly adjusted for, let us say, twenty-five yards at which range the target should have a four-inch bull, the pistol should hit two inches high. With the top of the front sight exactly level with the flat top of the rear sight, the bull's-eye should rest on top of them. Its bottom edge, which would be at six o'clock, should have an almost imperceptible margin of white, or none at all if you prefer, between it and the top of the front sight blade or bead.

Some expert shots prefer to use a U notch in the rear sight with a round bead in front and others prefer the Partridge type,—a broad-bladed flat-top front sight in a wide square cut rear notch. With this type, when the bull rests on top of the front blade there would be an equal width of white showing each side of the blade in the rear notch. There is no doubt that this sight is very accurate, but I find that it has a tendency to make the user slow and I refrain from using one for that reason.

Sooner or later the beginner will develop a flinch and

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this, though very difficult to control, must be immediately corrected. Flinch is nothing but the nervous anticipation of the report and recoil of the arm and, of course, is much more apparent when using a weapon of larger calibre with more muzzle blast than a .22 or other small bore.

It is because the most hardened expert must constantly guard against flinching that I stressed the point that the trigger must not be pulled but squeezed off by the pressure of the whole hand. The shooter should, in fact, not know exactly when the pistol is going off. As he aligns up the sights on the bull, he should place some pressure on the trigger. Familiarity with his weapon will tell him how much. As he anticipates that the sights are going to swing into line with the bull, he should increase the pressure. As they swing off the bull he stops and as they swing on again, he increases; eventually the pressure will be sufficient to release the sear and the hammer falls. It is almost fatal to supreme accuracy in slow fire target shooting to know when the shot will go off.

One cause of flinching which can be well avoided is an excessive trigger pull which in the pistol should not exceed three pounds. Another is heavy loads. In consequence, use light loads of the gallery variety when beginning with a large bore pistol and also deaden the report by stuffing cotton in the ears. If this does not stop the flinch, have someone else stand beside you and do all the loading with his back turned to you. Sometimes he should

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place a cartridge in the arm, and sometimes hand it back cocked but unloaded so that after all the most careful aiming and breathing, the gun will only click as you flinch and jerk in anticipation of the report. If this will not eventually cure the patient, the case is hopeless.

For rapid fire practice, the automatic is, of course, the easiest to operate, but if one prefers the revolver, and many of the best exponents of the hand gun do, he should learn to cock the hammer with the thumb of the right hand as he recovers and realigns it after the effects of the recoil of the previous shot. While all but one of our revolvers are double action, this is of no use where a fair degree of accuracy is demanded, and, in consequence, should only be resorted to for the fastest of shooting at a man-size mark at close quarters.

Target shooting usually becomes boring to most of us, so I would urge the adoption of some more exciting form of practice. A barrel rolled down a hillside is great fun and most excellent practice for the shooting man. A row of bottles full of water set up at twenty yards are splendid targets and afford no end of amusement when they burst and the contents fly up in a fine spray. When you can hit four out of five at twenty paces in ten seconds, you may consider yourself a good practical pistol shot.

The shooter should not forget also that though the conventional use of the pistol is with one hand and no rest, it is really capable of very excellent accuracy, ap-

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proaching that of a rifle, when shot with two hands from a rest. An excellent position for taking the head off of a grouse or other game is sitting, resting the elbows on the inside of the knees, and holding the grip with both hands. A quicker method when standing is to hold the pistol in the right hand as usual and then grasp the right wrist with the left hand, while the left arm is pressed tightly against the side for support. The shooter must then face somewhat to the right of his target, with the right forearm across the chest. It is the best way to shoot when one has the time and must make the first shot count.

There are many methods of carrying a pistol. If it is a light automatic for self-defense there is nothing better than the right-hand coat pocket. Then in an emergency one can shoot through the cloth. If it is a heavy gun, it is best carried in a spring holster under the left armpit with the butt to the front. I recommend such a holster for all occasions, either for concealment in the city or for sporting use afield. The shoulder holster is at all times more comfortable than the binding pressure of a gun belt sagging over the hip. The latter is only satisfactory for the mounted man.

In the foregoing I have touched only the high spots of pistol shooting. Whole volumes have been written upon it, but the most minute details of the art are not within the scope of this book.



CHAPTER TWENTY-FOUR

The All-Round 1934 Battery

I DO NOT propose to suggest a type or calibre of gun for every conceivable purpose. There is nothing practical about that. One's armament then becomes a burdensome collection rather than a working battery. In my opinion, it should consist of the least number of guns which will put up a first class performance under all conditions in any part of the world.

For game shooting, I believe this can be limited to four rifles (three, if the shooting will be confined within the limits of the Western Hemisphere), three shotguns, and two pistols. Two more rifles, a shotgun and a pistol may be added if one is going in seriously for competitive types of target shooting.

To begin with, there should be a moderately light, accurate and fast operating repeater of .22 calibre, rim fire, for small game such as gray squirrels, and for informal target shooting. It makes little difference whether you prefer the slide, bolt, or lever actions. But in its best form, it should be restocked to full size proportions and equipped with a globe combination front sight, adjust-

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able peep sight and a quickly detachable sporting telescope of not over three power. It should also have a sling strap for steady holding. The ordinary factory sights, consisting of a crude front bead and a notch sight leaf on the barrel, together with a little stock suitable for a small boy, simply offer insurmountable obstacles to accuracy.

The next rifle on the list would be for vermin, such as woodchucks, gophers, foxes and crows. These require a weapon with a flat trajectory and unusual accuracy, due to the small targets which they offer and the ranges at which they frequently must be killed. For this purpose, a previously stated, the .22 Hornet cartridge is quite in its class by itself, unless one prefers to kill two birds with one stone and secure a high speed rifle of moderate weight and calibre that could be used with equal satisfaction for deer and other medium sized game as well as vermin. I would select the 6.5 Mannlicher-Schoenauer, or a short action Mauser for the .250-3000. The rifle should weigh between six and a half pounds and seven pounds for it will be one and a half pounds heavier with a telescope sight which is an indispensable part of its equipment.

The next, of course, is the general service rifle. I can hardly think of another quite as good for use the world over as a bolt action .30-06, weighing about $7\frac{3}{4}$ pounds. This rifle will account for about 90 percent of the big game killed, irrespective of the locality.

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Lastly, the life saver. To a large extent, this weapon's importance lies in its moral support. I know a good many thoroughly experienced British and American hunters of the Dark Continent. One and all agree that if you miss the vital areas of a rhinoceros or elephant, it makes little difference whether you hit him with a 150 grain bullet having 2500 pounds energy, or a 500 grain bullet delivering 6000 pounds. After all, if the heart or brain is missed what immediate stopping effect can a 600 grain bullet have on an animal weighing many hundred-weight, such as a big elephant?

In consequence, almost all of the great latter day elephant hunters, including Neuman, W. D. M. Bell and Denis Lyell, preferred for such game the accurate penetrating solid bullet of 6.5 m/m, 7 m/m or 8 m/m calibres. Nevertheless, these cool and experienced hunters were considering the standing shot at close range where the bullet could be placed with deadly precision.

I do not for a moment believe that they would prefer such a load with which to stop a charging lion or buffalo or the larger thick skinned animals. The situation demands a hit with the largest thing handy, which, properly speaking, should be a large calibre double express rifle, with non-automatic ejectors.

This gun would seldom be used by the sportsman in Africa through deliberate choice, except possibly on

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standing game of the larger varieties at short range, or in case of a charge.

Usually, it should be (and is in theory if unfortunately not always in practice) directly behind him in the hands of the faithful gun bearer. At the same time, the globe trotting sportsman's travels may carry him into British India or Malaysia and it is there that the big rifle is in its element. The bulk of the shooting in the densest jungle is done at extremely short range, where it does not pay (at least not for long) to experiment with small bores in uncertain light, and consists in quick snap-shooting on *sladang* or pretty "kitties" like the Bengal tiger and the leopard.

Among the most popular weapons are the .465 number 2 and the .475. The .450 calibre should be avoided. These guns are taboo in British Asiatic colonies where, in the case of a native rising, they might be stolen and pressed into service with the old .450 Snyder cartridge, of which there are believed to be a great many still existent.

The all-around battery should contain a stout twenty bore double barrel shotgun of about $6\frac{1}{4}$ pounds' weight with 28-inch improved cylinder right and full choke left barrels, bored for $2\frac{3}{4}$ inch shells. Such a weapon is light, handy and quite powerful enough for all upland needs.

It should include a double twelve bore ejector for all-around use, of about 7 pounds' weight, 28-inch barrels, $2\frac{3}{4}$ chambers, preferably of box lock construction, modi-

THE ALL-ROUND 1934 BATTERY

fied and full choke. Such a gun is not out of place for any purpose. It is ideal for general duck shooting over decoys from point or battery and is not too heavy for an occasional day after partridge or snipe. It has one feature also that the twenty bore lacks—ammunition for it is world standard. One can get it anywhere that shells are sold.

The complete battery should, of course, contain one special fowling piece for use on pass and other forms of long range shooting. This should be a Magnum three inch chamber twelve bore of about $8\frac{1}{2}$ pounds' weight or a $9\frac{1}{2}$ pound ten bore. The former will throw $1\frac{3}{8}$ ounces of shot and the latter $1\frac{5}{8}$. It should be double barrel and for the purpose for which it is intended, I would recommend full choke in both barrels. It should not be too heavy; a light gun is to be preferred, under every conceivable circumstance.

For side arms, one should have a .22 calibre revolver or automatic for belt use to kill small game for the pot. By using both hands, one can learn to hold almost as steadily as with a small rifle. It is light and handy to carry, amply powerful for the purpose when used with hollow point ammunition, and does not disturb the surrounding country.

If a large defensive belt gun is required—a thing seldom needed today and never in the game fields of North America—I would suggest a large frame revolver for the

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.45 Colt or .44-40 cartridge. They are the most powerful available and the ammunition, like the twelve bore shell, can be found almost anywhere, from the Northwest trading posts to the Orient.

If the battery is to be complete and cover target shooting as well as sport, it should contain in addition a heavy solid frame bolt action .22 calibre target rifle with a suitable telescope sight.

There should also be a .30-06, as issued Springfield 1903 National match rifle, which has no equal for its purpose, and a 12 bore trap model shotgun, preferably a pump, with 32-inch barrel and a long straight stock. For clay target work this gun is in a class quite by itself.

A .22 calibre single shot, heavy frame pistol with adjustable sights for the target completes the list.

With such a battery, one is equipped for all conditions the world over. If he has the skill there is no game he cannot face, or competition he cannot enter.

If my readers feel that they know of a better gun, rifle or cartridge for a certain purpose than the types which I have suggested, let me say in self-defense that I do also. Remember, I said in the beginning that my ideal battery must be limited to a few guns to meet satisfactorily many needs. When one's battery assumes the proportions of a collection, he perforce becomes a slave to its care and it ceases to be ideal.



CHAPTER TWENTY-FIVE

The Care of Firearms

THOSE who are not conversant with the radical improvements made in ammunition within the last couple of years will be surprised at the brevity of this chapter.

Expert riflemen used to sit up nights working over the barrels of their favorite weapons, which would sometimes go wrong despite the greatest care. Now all this is passed. There is no more worry, no more sweat and toil, for with the new cartridges one need give the bore only a casual cleaning, rub any moisture off the exterior, and put the gun away in a dry corner.

I have spent hours doping a fine high-power target barrel with ammonia solution, to dissolve the metal fouling which adhered to the bore from the use of cupro-nickel jacketed bullets. But even then slight particles of it would sometimes remain unseen, beneath which the powder residue would get in its work, setting up a rapid corrosion which would be revealed when a bit of the fouling flaked off and showed the rust pits underneath.

But never again, because the old cupro-nickel jackets have given place to the improved gliding metal type,

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composed of a bronze which leaves no after effect. The only evidence of their use is a wash of bright copperish coating on the grooves which does not pile up and is so thin that it does no harm and need not be removed.

This first improvement was quickly followed by the introduction of non-rusting primers. Until a few years ago it was thought that powder residue was in itself injurious to steel and caused it to rust. As a result we used all kinds of so-called powder solvents which were supposed to remove it and the mysterious powder acids which we were told it formed.

Then it was discovered that the real trouble lay in the primer compounds, which contained potassium chlorate. When this was detonated it left in the bore of the gun a coating of residue consisting largely of potassium chloride which is one of the common salts. This salt has a strong affinity for water and will attract moisture, but it is itself soluble only in water. The oils with which we had been cleaning our guns to prevent rust had no effect upon it. It was the elbow grease that we had used upon them which was largely responsible for removing most of the harmful coating from the primers.

Consequently, we learned to our surprise that the very best thing with which to clean a gun was common water, but in most instances that is no longer necessary. Once they knew where the trouble lay, our chemists lost no time in developing a primer compound which dispensed

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with the harmful potassium chlorate and as a result, practically all of the ammunition being made today is loaded with what is known as a non-corrosive primer. As there is nothing in it to attract rust to the bore more noticeably than it would to the exterior surface of the arm in a damp climate, there is practically no need to clean a rifle, shotgun or pistol unless it has become wet.

This ammunition is now so well known, so well distributed and so much of the old stock on the shelves of the sporting goods stores has been used up that there is little fear of rusting a rifle through neglect.

For the benefit of those who might have a supply of the old loads which they would want to use up, or who could find no other in some out-of-the-way store, I would suggest that they swab out the bore with some patches saturated with plain water. Hot water is of course best, as it will heat the barrel and make it easier to dry with subsequent dry patches. If the weapon in question is a takedown the best plan is to pour a kettle of boiling water through the bore. This will heat the barrel to the extent that it will almost completely dry of its own temperature without additional aid. If the rifle is not a take-down model, the same thing can be accomplished by investing in a ten-cent funnel, and a few feet of surgical rubber hose such as one can get in any drug store. By attaching the funnel to one end of the hose and inserting the other end in the chamber of the rifle, the boiling

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water can be poured through without getting a drop of it in the action.

The introduction of the non-corrosive primer is, if anything, an even greater boon to the small bore rifleman. We all agreed the most difficult of all rifles to keep in condition was the .22 R. F. Probably this was due to the small area of the bore and the fact that in a rim fire shell the fulminate had to be used in greater proportion to the powder charge, being placed all around the rim so that there was no chance of a miss. The small surface area of the bore and the large percentage of the priming compound as compared to the powder charge meant that we had a concentrated application of potassium chloride attached to the bore.

It was, of course, more active and difficult to eradicate by the methods which we pursued. One would clean his rifle after shooting and awake to find that it had apparently sweated out an equal amount of residue in the night. He would again attack it with the old solvents and brushes and the next day the same thing was apparent in a minor form. Unless one cleaned his rifle about three consecutive days after shooting, it was ten to one that at the end of a month the barrel was ruined beyond recovery. That is why so many .22 rifles were sold; not one in five hundred was worn out by shooting. They succumbed in most instances to neglect and in others to a lack of understanding of the proper way to protect them.

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The loading companies tell us that it is advisable not to clean a .22 at all if the new type of ammunition is used exclusively. After shooting some of it one will notice that there is a grayish coating on the bore which they claim is actually protective, like galvanizing iron. To prove this I took a new rifle—put it in my cellar and every day as I came through from the garage fired ten rounds of Klean-bore .22 L. R. cartridges and omitted cleaning the rifle. I kept this up for three months and at the end of that time the bore was as perfect as the day it came from the factory.

Of course, if a rifle or any other gun is to be stored away for an indefinite time, it should be covered with a thick layer of grease. Any kind will do as well as the special gun greases so long as it is not derived from animal fats, which always contain some salt. Ordinary household vaseline is quite adequate. It should, of course, be obvious that thin sewing-machine oils are too light. They will run off in spots leaving the surface of the metal exposed to the air. The best way to coat the bore is to smear the vaseline onto an old bristle brush which fits it and run it through two or three times. As for the outside, just take a big gob of it in the hand, smear it all over the outside, and work it into the action.

Returning to the .22 for a moment, one trouble similar to metal fouling, which we used to have in the high power rifles, was leading of the bore. The soft lead of

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the unjacketed bullets would flake off and adhere to the barrel. I have seen cases of this in old barrels in which the bore had become rough and pitted, where the lead had pilled up until the bullets would stick in them. Now this is a thing of the past if we use the new type of bullet. This consists of a non-corrosive, high velocity .22 L. R. cartridge in which the bullet is plated with a thin coating of copper. With this ammunition, which all of the leading manufacturers are producing, the .22 is practically fool-proof.

But if one is by preference using the plain bullets and finds that his barrel is becoming leaded, he can easily clean it by purchasing a small bottle of quicksilver or mercury. Plug the breech, fill the barrel half full of the quicksilver and plug the muzzle, then shake it vigorously back and forth for a few moments. The mercury forms an amalgam with lead and absorbs it, removing every trace from the bore, and can then be poured back into the bottle and saved for subsequent treatments.

All that I have said about the rifles applies to the pistols, revolvers and shotguns as well—the only difference being that the revolvers were always easier to keep in condition than the rifles, and the shotguns the easiest of all. The bore of the shotgun is so much larger than the rifles used today that it seemed to dissipate the primer fouling to the point where it was not nearly as virulent, for, of course, the amount of primer compound needed to ignite

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a shotgun shell is no greater than that required to explode the rifle cartridge.

To sum up the situation, whether it is rifle, pistol or shotgun—use non-corrosive ammunition and stop worrying.

Occasionally a shooter wants to restore or improve the finish of the stock on a favorite gun, for the cheap varnish finishes on the average inexpensive weapon glaringly show up every scratch and dent. The following is a formula for polishing gun-stocks:

Get a small bottle of varnish remover in any paint store and apply it liberally to the stock. Then scrape it off with a piece of glass or sandpaper. Thoroughly wet the stock with gasoline and then wrap it up in wet rags. This will raise the fibre in the wood so that it will be fuzzy. Go over this with fine steel wool. Then rewet the stock to raise the grain again and polish off with steel wool. This operation should be repeated several times until the stock remains smooth despite the wetting. You can then depend upon its not losing its finish.

You should then start in with boiled linseed oil. Apply it liberally to the stock and work it in with the palm of your hand. Let this dry for twenty-four hours and repeat the operation until the stock will absorb no more oil. Then it is just a question of hand-polishing it. The more elbow grease you will use, the better results you will get.

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Occasionally I am asked to give a receipt for reblueing barrels and actions. This is a tedious, messy process that even the skilled gunsmith seldom does in his own shop —preferring to send the work out to a specialist. I could give the formula, which any druggist can fill, but far more depends upon the skill and experience of the user so it is better to send the gun back to the maker to have the work done properly. If, however, the reader ever feels that he wants to blue some parts himself, my suggestion would be to invest in a bottle of the commercial bluers of which there are a number upon the market, and follow instructions.

The locks of fine shotguns, which are used a great deal, particularly in wet weather, should be overhauled once every few seasons, but I would not advise the owner, unless he is quite experienced, to dismount the action of a high grade gun himself. At the least, he is liable to mutilate the screwheads in turning them out, and they will be an eyesore forever afterward. Better take the gun to the nearest gunsmith who will only charge a few dollars to strip the action with the proper tool and burnish and oil the working parts.

Adjustment of trigger pulls is an extremely delicate operation which has no place in an elementary work of this kind. Not every man who calls himself a gunsmith can do it skilfully.

Gun-stocks are frequently broken by being dropped or

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fallen upon, and usually the fracture occurs in the small of the grip. If it is not broken completely through and straight across, it can often be bound together with a piece of fine copper wire. I have done the operation with a simple roll of adhesive tape so that a gun could be used for the balance of a trip which otherwise would have been spoiled. So it is advisable to carry a small spool of it with you—particularly as it is useful in case of a blistered heel or when the seat of the breeches is torn on a barbed wire.



CHAPTER TWENTY-SIX

The Shooting Kit

WE Americans are conceded to be careless in our dress and in no instance is this so glaringly apparent as in our shooting garb. I believe that this is due largely to the fact that we are still somewhat under the influence of our colonial forefathers. The early pioneer had other and more serious things to think about than his appearance. His was the rough and ready equipment of any new frontier and the growing generations naturally aped those whom they looked upon as their superiors in sport.

Another slant on the situation which will no doubt be surprising to many of my readers is that among the majority of the wealthier class, shooting was not nearly as popular prior to the present century as it is today. In the days of our grandfathers, though we would find a keen sportsman of substance and social prestige here and there, by the vast majority of people in his circle shooting was looked down upon as a rather lowly form of sport. Gentlemen pitted their fighting cocks, raced their horses, gambled and drank and fought among themselves, but in most instances they left the shooting of game to the

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lower strata of society and bought that which they required for their tables. Therefore, when a gentleman did feel that primeval urge to hunt his own dinner for the sport of the thing, he was inclined to sneak out the back door and not brazenly advertise his quest to all his friends. I can well remember when I was a small boy that my mother's friends were not too sure she was starting my footsteps aright in permitting me to own a gun and go hunting with it.

The result of all this is that, even in the vast majority of instances, our sportsmen look like scarecrows. Why one should affect a dirty, ragged, blood-stained, greasy canvas jacket for quail shooting when he could probably own a better-looking garment in which to clean his automobile or weed his garden, I fail to understand.

It is not at all an uncommon thing in America to see a sportsman who can write his yearly income in five or six figures, jump into a car that cost him four or five thousand dollars, looking more as if he belonged under it than in it, bedecked in a frowsy old felt hat with a ragged band, a five dollar gunning coat that has probably seen ten years of service, the most dilapidated breeches he can find in his closet and footwear befitting a tramp. He may own a \$500.00 gun and a dog with a pedigree that goes back to Cerberus, yet I insist that his shooting garb is just as affected, though in inverse ratio, as the apparel of some dandy on the boulevard.

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Fortunately for our self-respect and that of others who come to our shores, this is slowly passing. Sportsmen of sense appreciate that a man can shoot just as accurately and walk just as far, looking like a gentleman as he can disguised as a tramp, and as our shooting becomes more expensive and in consequence demands more respect, it is taking on a new dignity.

Of course, the clothes of the shooting man depend largely upon when and where he is hunting. North America is a large slice of the earth's surface and it is quite obvious that the kit which is right for Florida quail shooting would hardly serve for a sheep hunter in the Cassiars.

Getting down to the bottom of things, which in this instance is the underclothing and footwear, we find that the same principles hold true. No matter where one is hunting—in the sub-arctics or the tropics, he should never consider anything but woolen underwear, because it is the only thing which will completely absorb perspiration and prevent chills.

The only variation is in weight. Of course, in a hot climate, such as one will encounter while shooting quail in the Gulf and Mexican border states, it should be of the lightest weight. For the fastidious sportsman who can afford it, a mixture of silk and wool is excellent, but wool it must be if he would avoid illness. As a last word in this respect, if one is being stubborn and insists upon using cotton, which becomes clammy when wet and remains so,

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I recommend that he should compromise by adopting a belly-band of wool, such as shooters under the Equator always wear. Such an addition to his apparel will go far toward preventing chills in the stomach which so often lead to dysentery.

Shooting in Old Mexico many years ago, I was ridiculed by my companions for my swaddling clothes. The days are fearfully hot, the thermometer often reaching one hundred and eighteen degrees, yet if one sat down under a chaparral bush to rest, in a moment he would hear a gentle sighing in the distance and a zephyr would blow by, rattling the dry leaves, until it passed and died away in the distance. Immediately this touched one, he felt refreshingly cool from head to foot, due to the rapid absorption of moisture from his sodden clothes. A constant repetition of this throughout the day quickly led to chills and it was not long before all my companions were laid up and, under the tropical sun, a trivial illness may become very serious.

Nowhere is the need of woolen clothing more apparent than in the mountains of the Northwest. Constant climbing is most fatiguing at high altitude, where the air is rarified and cold and the wind blows almost ceaselessly. One sits down to rest his weary muscles and regain his breath in lungs that seem about to explode, and in a few moments he is freezing. Despite the heaviest of woolens he must soon be up and on again to avoid a severe chill,

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all because the exertion has induced a profuse sweat which has drenched him from head to foot.

The guides and timber cruisers in the north country wear the heaviest woolen garments they can secure. Personally, I think it a better plan to wear two suits of thin underclothes. They are warmer than one heavy one and by reversing them each day, it relieves one of a great deal of washing in camp, for the outer one is aired to a certain extent even in the wearing.

For the duck shooter who spends most of the day sitting in a blind with little or no exertion and often in freezing weather, where his problem is to keep warm without bulky clothing which hampers a free swing of the gun, there is a still better arrangement. Athletic supply stores carry special training underwear such as boxers, wrestlers and jockeys use for reducing. It is warm, not too bulky, and does away with the need of the numerous sweaters which are usually seen. In fact, it is so warm that one should not consider wearing it where he must walk for his game or climb in a rough country, but for the duck shooter it has no peer.

Footwear should be as light as strength will permit, and reasonably water-proof. It should be sufficiently roomy to permit the wearing of two pairs of socks without pinching—one heavy outside pair and a light weight pair next to the feet. Above all, it should be broad in the toe, low and broad in the heel and only ankle high, so as to



A GAME RANGER WATCHING THE MOVEMENTS OF A DEER HERD
IN THE WAIRARAPA DISTRICT, NORTH ISLAND, NEW ZEALAND

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permit full freedom to the calf muscles. For mountain work the soles and heels should be studded with soft Swedish iron nails.

Despite numerous warnings, many still think that rubber is the thing for the mountains. I shall never forget my first sheep hunt in northern Alberta, when I wore a pair of rubber-soled shoes. It so happened that the first day I started out was cold and dry and the ease with which I could noiselessly romp over the rocks without slipping was a joy. On the second day, however, we were caught in one of those frequent thunder storms that come up unexpectedly. In no time the rocks and grassy alpine slopes were sopping wet. It took me three hours to get down to camp and it is a wonder I ever made it without breaking any bones.

Where one will encounter dry rocks one moment, moss and slippery, grassy slopes the next, where he may have to climb across a steep draw or crawl over a ledge of ice, leave in the hot sun and return in a snow-storm, there is only one thing that is safe and durable and that is hobnails. The Swiss have been climbing mountains far longer than we have and they know best.

Since I have used these hobnailed shoes in Canada, I have worn the same kind for quail shooting. Many an accident in the open piney woods of the South would be avoided if a man had had studded shoes which held. Another good arrangement for eastern hunting, partic-

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ularly woods hunting, is the Phillips military soles, consisting of little leather pads which are attached to the heel and across the ball of the foot and at the toes. These can be screwed on by any cobbler. Their wide-spread use by officers during the war first brought them to my notice. They are noiseless, easy on the feet and will permit one to walk up a slate roof.

One of the two most abominable things for the feet is the high laced boot with little studs placed close together which take half an hour to tie up properly when one has the least time to spare. These are noisy in brush, excessively heavy, and bind the ankles and calf. The second is the moccasin, which has no place in the modern sportsman's outfit. Many a man going into the north woods buys a shoe pac because he thinks it will be quieter and in a couple of days his feet are so crippled with stone bruises that he is in no condition to hunt and consequently his trip is ruined.

After all, the average man can get through the woods almost as quickly with a thin pliable soled shoe, which will properly protect his feet, as he can in the soleless moccasin with which he slips and slides on wet leaves and is constantly hurting his feet. A combination of the two—that is, the so-called high shoe pac without a sole is the last word in what NOT to wear.

Despite its abominable appearance, the best all-round boot for the sportsman, for other than mountain work, is

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the rubber-sole, leather-top shoe originally designed by L. L. Bean of Maine.

I have mentioned here that shoes should be only ankle-high. That is all that is necessary, because if a man is quail shooting or wearing breeches where leggings are required, a loose pair of spiral leather leggings is the most desirable as they give complete protection to the legs. For mountain hunting, there is nothing like woolen spiral puttees as worn in the army. They are noiseless against rocks, afford complete protection and freedom to the legs and in case of an accident, one has a pair of excellent bandages at his immediate command. Furthermore, they are warm and practically water-proof.

The spiral puttee was conceived in the Himalaya Mountains. Most useful things of this kind are born of necessity.

The big-game hunter's outer clothing should, of course, be woolen. Whether he is hunting in the north woods or the open mountain pastures of the West, there is nothing to beat heavy mackinaw breeches, a heavy flannel shirt and a stag coat. These are not pretty but they do not have to be. I would also recommend a good big silk handkerchief to wrap around the neck. The intense rays of the sun at high altitudes will sometimes burn one to the bone in the morning, though he may be in danger of freezing in the afternoon. Variations in temperature of 45 to 50 degrees in five or six hours are not at all unusual. I once

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remarked to my guide in Alberta that it was quite likely for a man to be frozen to death in the afternoon if he was not sunstruck in the morning, and this is almost literally possible.

The hat for the West should of course be a broad-brimmed felt Stetson. It has a three-fold purpose. In riding through thick timber, particularly at night after dark, it protects the eyes from intervening snags that might blind one—it also keeps sun and rain off the back of one's neck, and there is nothing more disagreeable than that. Furthermore, it is an excellent basin in which to bring water to your horse when you can climb to water which your animal cannot reach.

By token of the same proven advantages, I would recommend the cowboy chaps. There is nothing so comfortable with which to ride a stock saddle. They protect the legs and the breeches from being torn by the snags of dead pine through which one must ride sometimes for miles. They are warm in cold windy weather, and are a complete protection against rain. They are a good thing to lie down on or sit on before a fire in camp and when you dismount from your horse to hunt, you can sling them over the saddle horn and hook open the two legs together in front so as to form a blanket to protect your horse's chest and legs—and the horse must be protected. He is your best friend.

It goes without saying that woolen clothing is the only

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thing for the eastern big-game hunter, where traveling through the woods quietly is one of the cardinal virtues. Wool, however, in most instances does not meet the necessities of the upland-game hunter. In the Southwest he must contend with cactus, chaparral and mesquite. In the Northeast he has blackberries, cat briars and barb wire to meet.

Canvas or heavy khaki clothes give the cheapest form of protection, though if a man wants to improve upon them to some extent, he can use moleskin or a similar pliable but tough fabric. Unfortunately, there is no really satisfactory ready-made shooting coat produced in America today. The only commendable one that I know of is made by Burberry in England. Canvas of the quality of most of our shooting clothes has the advantage of being almost water-proof and briar-proof, but I know of nothing more uncomfortable or vulgar-looking than these stiff, dirty brown canvas coats, such as the average sportsman picks up in the local hardware store for \$5.00 or \$6.00. Even when dry they are about as pliable as a suit of armor, and when wet their rigidity is a source of amazement.

I think one of the greatest pleasures derived from shooting in the Green Mountains is the complete absence of briars. The first day when my host met me in a pair of low oxfords and golf stockings, I thought he was crazy. I had been used to fighting for my shots at wood-

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cock and grouse through almost impenetrable briars. Within 48 hours I was garbed as he was and I never wore the objectionable leggings again.

In most parts of America, however, some form of tough fabric is indispensable. I have solved the problem to my own satisfaction by the use of what I call shooting chaps which I designed for myself. They are made exactly like the cowboy's leather chaps without a seat and very wide in the leg, being supported over the trousers by a belt which buckles in the small of the back. Unlike the chaps, they are cut off just below the knee.

With a pair of these chaps made of heavy moleskin or canvas, one can step into his car in a good-looking pair of knickers and when he reaches the shooting ground, simply pull them on over his boots and be completely protected from barb wire, briars, dirty, swampy water and every other obstacle. On his return at the end of a day's shooting, he need not change in the cellar. He sits down on the running board of his car, pulls off the overalls or chaps, switches from gunning coat to one of tweeds and when he enters his living-room, he looks as if he belonged there.

One sees many of these objectionable canvas coats used for duck shooting. As a matter of fact, nothing could be worse. They are so stiff that they do not cling to the figure and the cold drives in around them from every direction. They are absolutely wrong in color for deep-water

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duck shooting and can only camouflage the shooter when they are used from a blind made of marsh grass. Usually they are adorned with many odd pockets, both inside and out, so that one never knows where he put his matches, pipe, tobacco, whistle and the other what-nots that a shooter carries. He would, as a matter of fact, be much better off if he dumped them all in one pocket. At least, when he reached in for them, he would know he would find them there.

The shooting coat should have two large roomy shell pockets—one on each side,—an upper breast pocket on the left side for a handkerchief, and an inside pocket protected from driving rain for matches and tobacco. There should also be one large game pocket in the shirt. His whistle or his duck call should be dangling freely on a string around his neck. Yet the average shooting coat will have at least four or five more pockets than I have mentioned, and the coats are so designed that they seem deliberately to throw all the weight of the filled shell pockets upon the shooter's arms, making it as difficult as possible for him to raise his gun to the shoulder. In very few instances are they made with gussets in the armpits of sufficient length and breadth to permit one to raise his gun without lifting at the same time the entire weight contained in the coat.

For southern shooting a splendid garment is the sleeveless coat made like a loose waistcoat, which has a small

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game pocket in the back in which one can easily put a limit of quail or snipe and a roomy shell pocket over each hip. This is usually worn with a flannel shirt of sufficient weight to afford protection to the arms.

The popular tweed cap is probably the worst form of headgear for the upland. Every briar and projecting twig seems to catch on it and try to pull it from one's head. The best hat is an old soft felt with a moderately narrow brim of sufficient width to keep the water out of one's neck and protect the eyes from the sun.

Shooting gloves are a difficult problem. Most of us find we cannot shoot well with a glove on the trigger hand. The solution is easy, however, for anything but the most severe weather. Take an old pair of walking gloves, cut the trigger finger off and smear that digit with vaseline or gun grease. If you ever lose your gloves while duck shooting and you have any grease, try the experiment of rubbing some on your hands. It is surprising how warm they will keep without gloves, when well greased. This is a particularly good thing to remember if you have many decoys to pick up at sundown. It proves equally effective on the feet and I have always greased mine with vaseline before drawing on my socks when I anticipated a cold day in the blind. Incidentally, there is no better protection for the city-bred sportsman when starting on a stiff jaunt through the woods. If you have no grease, soap the heel of the inside sock. This will tend to make it slip,

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decrease friction and the possibility of a blister which may ruin the holiday.

There are shooting mitts made with trigger fingers on the right hand, but if warm enough to protect the hands, they are usually too cumbersome, unless one is using a single trigger gun with the trigger in the rear position, when he can easily get the gloved finger in the trigger guard. Personally, I have rejected them. I find it easier to wear an ordinary pair of lumberman's mitts and trust to being able to snatch one off in time when a shot presents itself. There is one thing certain—if it comes to losing a shot or keeping the hands warm, keep them warm, because one cannot shoot accurately with stiff cold fingers.

A very serious problem which confronts quail shooters in the far south is the rattlesnake and the moccasin menace. Quail have a way when flushed of pitching in the nearest marshy spot, where one is most likely to encounter these dangerous reptiles. The man that keeps away from the low wet ground is not likely to have much trouble with rattlesnakes and less with moccasins, but he will, by the same token, lose many shots at game.

The average sporting goods stores carry snake-proof leggings that come well above the knee. They are made of heavy canvas, interwoven with a thin copper-wire mesh. These leggings are said to be impenetrable, though I have never had an opportunity to give them a practical demonstration. Some people depend upon

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leather puttee leggings, but a big diamond-back might well strike above the top of one and, after observing the weight of some of these monsters and the length of their fangs, I am quite certain he would go through a soft pig-skin legging.

Southern shooters inform me that, when all is said and done, the rubber boot is the best protection, so if you are going to walk southern marshes in a snake country, you had better get a pair. A striking snake will glance off of the shiny hard surface.



CHAPTER TWENTY-SEVEN

Shooting for Women

IT IS said that there is nothing so bad that some good is not derived from it and probably the Great War had more to do with woman's emancipation from time-honored prejudice than any other factor in the last generation. At any rate women have so firmly established their position in the realm of sport that no book upon shooting that did not consider them would be complete.

When I was a small boy, not very many years ago, the most urban people looked askance at the hoydens who romped about. Old ladies of both sexes shook their heads at the girls who played fast tennis instead of pat-ball or forsook their knitting needles to shorten the hem of a bathing skirt to practical swimming length. It is impossible to say what they would have thought of Channel swimmers. To ninety-five percent of the community the woman was utterly lost who, riding astride, held her place in the hunting field. One of the chief attractions of Buffalo Bill's show was Annie Oakley. Today she would not be a drawing card because in many places about the country there are women who, though not exhibitionists, can from a practical point of view shoot

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quite as well as she could. In swimming, aviation, cross country riding and other active outdoor sports in which skill is as important as brawn, we find women successfully defending their position and competing with men on an equal plane.

So it must not be thought that I am treating them cavalierly in devoting but a single chapter to them. Considered in the proper light, it is the most complimentary thing I could do, because everything I have said in this book applies to men and women equally and a sportsman who does not encourage his womenfolk to participate in his shooting forays, is losing a great deal of personal enjoyment, besides depriving them of healthful, open-air activity.

Once the average woman's antipathy to firearms has been overcome by a little encouragement and success, she quickly becomes enthusiastic, and enthusiasm is the basis of skill.

I have made the statement many times in my writings that in a rifle or pistol match between teams of boys and girls of the same age and experience the girls will almost invariably beat the boys.

Most women will tell you that they could not possibly kill anything with a gun, yet I have observed that when they have overcome this perfectly natural prejudice they quickly acquire the viewpoint of the true sportsman and are just as fond of game shooting as men. Anyone who

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has shot grouse on the high hills as I have with Her Grace, The Duchess of Montrose, or seen many notable American ladies take their full share of the sport on ducks or upland game would readily understand their ability to hold their own.

In selecting the gun for a woman, the points to be considered are the same as those confronting a man. The average strong girl or young woman is quite capable of handling a twelve bore gun. Most of our expert women shots in both trap and skeet shooting are using guns of that calibre and they can as easily use one for duck shooting. A generously bored twelve making a fairly open pattern with a mild load, would be far more encouraging in the field than a twenty, which would of necessity have to be full choke and far less punishing than an overloaded twenty.

As regards the upland gun, the tendency to reduce the bore and use twenties is growing so rapidly that there is certainly no need for the sportswoman to adopt anything larger. It is only necessary to observe the difference in the average woman's formation—her arms being somewhat shorter and her breast deeper—her gun-stock should be rather on the short side and more particularly with a short toe.

As regards the rifle, whether it is for target shooting or big game, the same thing applies.

I saw a small woman, whom I had taught to shoot,

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shoot with a world's champion marksman and, using a Service Springfield with the regulation cartridge, hold him to a tied score for ten shots at one hundred yards. Within a year, I saw her stalk to twelve thousand feet and kill her sheep with a telescope-sighted rifle at four hundred and fifty yards.

So it is a mistake to handicap a sportswoman with a rifle which is really insufficient in power for the game which she pursues.

A man needs nothing larger than a .30-30 or .250-3000 for deer and there is no reason why a sportswoman should use a smaller size. If she is hunting big game in the Northwest where a heavier rifle is needed, it should be remembered that she need not carry it all day, as most of her hunting will be done from the saddle, and when the stalk begins her guide can help her with the rifle.

Nor must it be thought that it will take a woman too long to learn this game. Early last spring I convinced my bride, who had never fired a shot, that she would like gunning. I selected a shotgun for her and we progressed by easy stages. A little rudimentary instruction at the hand-trap, followed by some skeet shooting, prepared her for crow-shooting during the closed season. August found us in Scotland and before we left the Highlands she had the satisfaction of bringing down twenty-four grouse to her own gun in an afternoon.

As regards the shooting kit, I feel that this also can be



A BIT OF LOWLAND SNipe GROUND IN SCOTLAND

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treated briefly. The type of clothes which I have suggested for men are quite as practical for women.

Wool is emphatically the only thing for cold weather and even if the sportswoman is attacking the briars and brambles of our upland covets where canvas or duck is necessary, she must wear wool underneath.

I would like to suggest that there is a surprising complex in the average woman which, despite her taste in selecting her normal garb, permits her to dress in the most outlandish assortment of ill-fitting clothes when she takes to shooting. Perhaps woman's love for fluffy things makes her unfit to select with the best discretion in the tailor-made line, and unfortunately the standard shooting clothes made in America for men and women are abominably cut.

I trust that I will not be making too sweeping a statement if I say that nine times out of ten, a woman's figure is such that she should not permit herself to be seen in riding breeches. Having worn a kilt myself, I know that a short skirt can be quite as comfortable and give as much freedom of movement in covet and field shooting. When it comes to mountain hunting, breeches are a necessity and must be of a thickness that does not allow a nicety of cut, but these are not liable to shock the sensibilities of the Indian guide she uses in such country.

As woman's interest in shooting increases her tailors will learn to dress her attractively for it.



CHAPTER TWENTY-EIGHT

Shooting Formalities

THE REASONS for many of the niceties of good breeding in the field or at home are shrouded in the mystery of the dim past but trace them back to their source and we find that etiquette is generally based upon common sense and consideration for others.

Certainly in no case is it more imperative than in shooting and the man who is lacking in tact, generosity and consideration for his companions will soon awaken to the sorrowful fact that he has none to depend upon. If he is selfish and faultfinding in adversity, and more particularly if he is careless in the handling of a gun, it will soon be noised about, and good sportsmen will shun his society.

Safety is, of course, of paramount importance. One really cannot be too careful how he uses a lethal weapon. There are an appalling number of shooting accidents in the United States which is perhaps to be expected. Not only are there more shooters in this country than elsewhere, but there is a far smaller percentage of well schooled sportsmen.

In Europe most of the shooters are of the wealthy class who grew up under the strict direction of their forebears

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or a trusted keeper, and whose shooting is a social event where carelessness with a gun is as great a breach of good form as eating peas with a knife. Those of the lower strata of society, the yeomen type, are sufficiently often in the eyes of the others to appreciate and adopt good form with a gun.

Here, quite the other order of affairs prevails. Form in shooting, except by a few globe trotters and old gentlemen, is almost unknown. My first experience as a target was in the Adirondacks many years ago. I was still hunting and wore a white sweater, which I thought conspicuous enough, though, as a matter of fact, it is a very questionable protection, as a deer's stern, about the only part of a startled buck one sees, is the same color.

I sat down upon a stump to rest and smoke, and as I loaded my pipe in a leisurely fashion, I was startled by a shot across the valley. The second shot struck my stump and I arose in my wrath (or terror) and emptied a .35 WCF at the spot where the flash came from. There was no retaliating fire, but someone went up that valley with surprising speed. I recommend the procedure to all human targets. It is the quickest and most effective method of telling yonder nimrod that you are not a deer, and is a nice way to let him know just how you felt under similar conditions.

My second experience was in Maryland when on a quail shoot. The day before I had to shoot with a friend

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of my host who was of that objectionable variety that rushes forth to retrieve every bird grassed, and sometimes remarks that he particularly noticed that you shot low or behind. I refused gracefully an invitation to let him shoot over my dog the following day, but luck was against me. I ran into him and had to suffer his presence or call off the shoot.

An hour later, after he had retrieved two more of my birds, one got up in an open stubble and flew directly from him toward me. I was slightly behind him and as he whirled and fired at thirty yards I had only time to drop my head. The bird fell dead at my feet; curiously enough I noticed that in the fraction of time before I felt a ton of brick smash into me.

Sixty-eight No. 8's were in my face, hands, neck and chest. If he had not borrowed some of my shells, which happened to be brush loads with spreaders in them to shoot me with, I would not be enjoying life today.

Ten years later I was back there shooting again and heard that my pot-shooting friend had never returned to the little town of his birth since the day he helped take me to a doctor.

Shooting on a northern lake when I was only a youngster, I was driven ashore by a snow squall and as I drew my boat up on the beach, I encountered another young fellow landing at the same place. As I walked up to the house, he was busily engaged in removing the

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decoys from his skiff. Standing talking to the farmer with whom I stayed, I heard a report, but thought nothing of it except that he had secured a shot at some bird off shore.

Twilight came and he had not returned; so we went down the steep bluff to the beach. The poor boy was lying about ten paces from the boat with a horrible pool of blood smearing the fresh snow—a terrific hole was blown in his chest. He had apparently lifted his old hammer gun by the muzzle and the hammer had caught on the seat and snapped back. He had been dead for two hours.

Last year I had to appear as a State witness in a murder trial. A man had shot a visiting friend in his home with a twelve bore. Whether it was an accident or deliberate murder hung upon how far the deceased was from the muzzle of the gun. It was my place to prove that, but justice is peculiar—I never had a chance to tell the jury what I thought.

At any rate, you will pardon me if my intimate acquaintance with accidental shooting makes me pose as a bit of an authority on the subject.

There are an infinite variety of careless actions which may prove fatal. There is the man who habitually climbs a rail fence or crawls through a wire one with a gun at full cock.

Some pedantic old fossils insist on the removal of the shells. This is not necessary, but break the gun and place

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your thumb over the breech to keep your shells from falling out.

There is the man who always draws a gun toward him by the muzzle from a boat or over a stone wall. At no time should a gun be picked up in any way but by the grip and, whether on the shoulder, across the arm, or in any other position, it should be held by the grip. Then one cannot stumble and lose control over the direction of the muzzle.

There is the man who leaves loaded guns standing carelessly against a wall to fall over or be picked up by some moron who knows nothing about a gun. Of course, they have no business picking up strange guns, but they do. We are responsible for their welfare, that's why we have life-savers and traffic policemen.

There is the idiot who points his gun at another, either carelessly or deliberately in elephantine humor. At the first offense, politely call his attention to it. Don't overlook it, rather step aside noticeably, or look pointedly at his gun. This is usually sufficient to draw an apology from him. If he repeats the offense promptly give him a thrashing.

There is the careless or callous chap who has not sufficient self-restraint to watch where he is shooting and takes dangerously close chances with his companions, particularly in thick cover. Let his action be sufficient warning. Avoid him as a shooting companion.

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Shot charges do strange things at the best. A pellet of shot fired some fifteen yards in front of me and about forty feet over my head, struck me on the hat. Simply a deformed pellet that went off the muzzle at an acute angle, but it might have ruined an eye.

Then there is the man who shoots at anything that moves. He should get a turn in jail to reduce his blood pressure.

Accidents are often caused by the man who in company always crowds forward. Sometimes he gets it inadvertently when in thick cover.

Other causes of trouble are cheap or worn out guns. It is best to give the owners of such arms a wide berth anyway, even if their old guns are not liable to blow up. You can often judge the workman by his tools.

I must also mention another cause of trouble which is increasing. One cannot drop a twelve bore shell through a ten bore or a sixteen through a twelve, but a twenty bore shell dropped into a twelve will disappear, as it will slide down until the rim strikes the cone, where it will stick. One may drop two shells into the breech of a twelve bore, one of which is a twenty, picked up with a bunch of loose shells and put in the pocket.

The twenty bore case will perform as described. The shooter may open the gun, never notice the twenty stuck below the chamber and, thinking he neglected to fill that barrel, drop a twelve gauge shell on top of it. The twenty

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bore shell is exploded right where the barrel is thinnest and, of course, with disastrous effect. The gun is always ruined and usually a hand lost as well. I had two guns brought to me within a year which I am sure were so wrecked.

Please do not think that I am an old fuss-budget that would make caution laborious. There is no one more tiresome than the over-cautious hunter. And, strange to say, I have observed that he is often quite the most dangerous.

Watch the chap who is always cautioning others, or going to absurd extremes to show how careful he is. Nine times out of ten he is one of those slow shots who will swing on a bird and follow it in a half circle before he lets off. Such a man is far more dangerous than the snap shot who tosses his gun to his shoulder and lets off as the butt touches him. For the slow shot is often, due to his preoccupation in following his bird, shooting near someone else.

I annoyed a correspondent some time ago who said he had never had a gun go off by accident, by telling him that he had not had a great deal of experience. I have had my gun go off several times in twenty-five years of shooting. It is embarrassing, but not a cause of worry. I knew where it was pointed.

I have had one or two testy old codgers say, "Young man, is that safety on?" NO! it's not on! Furthermore, when I am looking for game it never is on. A gun is

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made to shoot and to kill, hence it is a highly dangerous instrument, and should always be treated as such. I never have a safety on unless I am walking up a road from one bit of cover to another and have relaxed my vigilance for game.

When I enter a car or a house the gun is empty. When I cross a wall or a fence it is open. I am not trusting a safety; in fact, I have some guns now without one. I know such a gun is always ready to go off and will take more precaution with it.

But be careful. The man who shoots another has a great deal of misery in store for himself.

In the field it is a common practice to carry the gun in both hands with the muzzle pointed toward the ground. This is wrong. If one stumbles, he will instinctively raise the gun and the muzzle may cover a nearby companion. If he falls completely, he may drop the gun or, if he holds on to it with both hands, receive personal injury from contact with the hard ground.

When the gun is carried with the muzzle deflected, it is not in position for a quick shot. It must be raised a long way before one can get on to his game. The muzzle is almost certain to cover a bird dog or hound in the near foreground. Many of them are killed in this manner.

The gun should be carried in the right hand by the small of the grip—with the barrels resting on the shoulder as illustrated in the photograph herewith. Please note

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that the sighting rib is against the shoulder blade and the trigger guard is upward. This tends to pitch the barrels high and the gun can be swung down quickly for shooting.

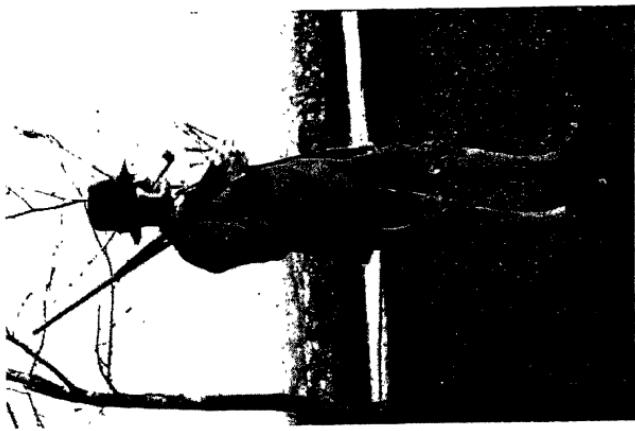
When the gun is carried across the shoulder military fashion with the trigger guard down, the necessary movements to bring it into shooting position are complicated and the muzzles are deflected to a lower line and will frequently sweep one's companion as one turns.

The proper position in which to carry the gun when expecting a shot over a pointing dog or in thick cover is with the fingers of the right hand enclosing the trigger guard as well as the grip and pressing it against the right side. The left hand should grasp the barrels in front of the forearm, holding the muzzle at a slight angle with the gun at the ready. In this position one can quickly and safely pass through thick cover without any possibility of brush catching in the triggers and causing a premature discharge.

But there are many other things of almost equal importance to remember. I believe that to curb one's eagerness and enthusiasm is the most difficult. Do not rush in to pick up a bird at which some other man may also have shot. We cannot always be sure, and maybe he did hit it. Nor by an ill-advised word intimate that you think it was yours. By the same token, do not steal a shot from another when a bird rises on his side. It is a cardinal

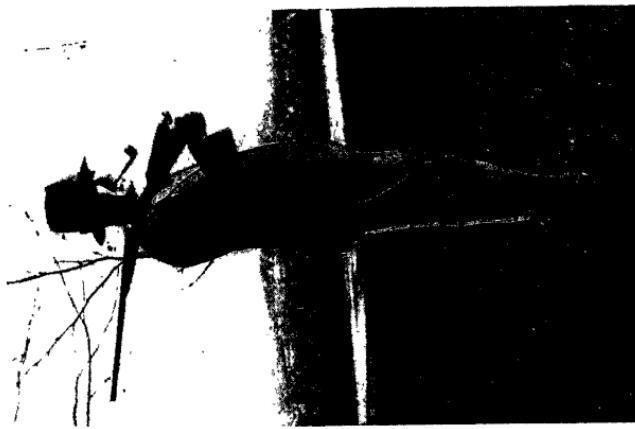
THE RIGHT WAY TO CARRY A GUN

Note that the pistol grip is up and the rib rests against the shoulder, pointing the muzzles high in the air



THE WRONG WAY TO CARRY A GUN

When carried military fashion, with the trigger guard down, the muzzles may cover companion as the bearer turns



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rule that game on the right belongs to the man on the right and vice versa. After he has shot and missed, it is your turn to try to stop it. Young sportsmen are particular offenders in these instances but there are many who under normal conditions are the most generous of men, who never overcome the habit.

When you encounter such, it is best to make a mental note of it and look elsewhere for your next companion. Yet one can, if he cares enough for their company, think of a way of bringing their lack of courtesy home to them. I remember one amusing occasion when an old chap who should have known better picked up two or three birds which I was sure I had grassed, and stole a shot from under my nose which was rightfully mine. I waited for him and when a bird rose on his side I let him kill it and then calmly walked over and, picking it up, deposited it in my game pocket. I believe he was just about to remonstrate when the truth dawned upon him, for he wasn't quite a fool, and we had an enjoyable time from then on. When you encounter a man who habitually shoots at your birds, it is usually sufficient to remark, "Mine, I believe."

Another particularly disagreeable thing to the owner is to have someone else order his dog about. Whether the beast is working properly or not, it will confuse him to be commanded by anyone but his master. He may not be used to the terms of command which you use and it gets him into the habit of looking elsewhere than to his master

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for advice. It is particularly bad for a young dog. After all, good old dogs that know their business will probably snub you as you deserve.

Another thing to remember is that when someone favors you by taking you to one of his favorite haunts for a day's shooting you should not tell everyone you know where it is or romp back there with them. He probably would not take you in the first place if he thought that you would do such a thing but it should be unnecessary for him to caution you against it.

A great deal of our free shooting entails quite a bit of hard work, particularly when camping or setting out decoys and building blinds. See to it that you do not shirk but do your fair share of the chores. If in doubt, do a bit more than your share. Rest assured that it will not pass unnoticed and will be chalked up to your credit.

If the day is cold and wet and the fowl are not flying or if the ground is dry and makes poor scenting and the dogs flush some of the birds out of range, don't kick—take it as it comes with the philosophical reflection that not one day in ten can be marked in red letters. No one has much affection for a chronic grouch who is always complaining because the dinner is scorched or the tent leaks or he has a blister on his heel. If he does not stand the gaff, his place is at home.

Show consideration for the beginner and do not be chary of advice. Remember that some kind-hearted fellow

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started your footsteps aright and do likewise. I do not know a successful shooter who has not someone to look up to or remember as his preceptor.

Everyone has his off days and unlucky ones. Therefore, if you are doing noticeably better than your companion, it is the mark of a gentleman to give him some of the choice shots.

When in thick cover do not flush a bird ahead of your dog without calling out sharply, "Mark!" to warn your companion. You should know exactly where he is before you shoot in any case and the bird may flush toward him. Without warning of the coming event, he will not be prepared to take the shot.

When a bird flushes unexpectedly call, "Mark Right!" or "Mark Left!" as the case may be, to give those with you every opportunity. And do not waste your companions' time hunting around for birds which you would like to think you struck, merely as a blind for a poor shot. Of course, make every reasonable effort to find a killed or wounded bird but this thing becomes a bore when carried to extremes and deludes no one for long. And above all in this respect, do not make a point of explaining the reason for all of your misses. No amount of excuses will make a good shot of a poor one. If you are a top-notch performer your companions will soon realize it but you will never be able to talk them into thinking so. Do not worry over a few misses,—shooting would be a

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tame sport indeed without them. Forget them as soon as you can; dwelling upon them is conducive to a repetition.

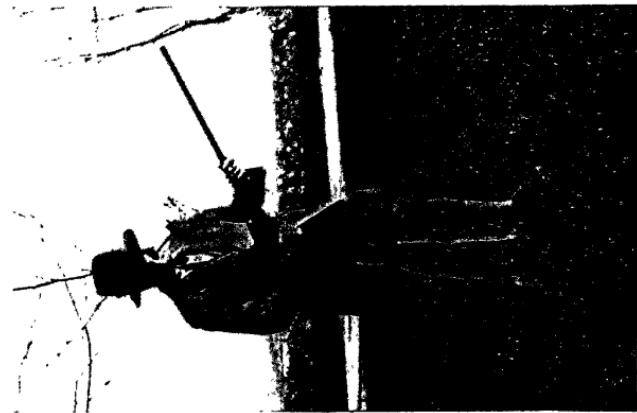
Never shoot into a flock of ducks on the water. You are far more likely to kill in flight when the vital parts are not protected by the folded wings and partly under water like the engine room of a battleship. Do not blaze into the brown on a bevy of quail. Pick one first from the left or the right according to which side you are on, and then take the next. We are not market gunners today. Your idea should be to kill neatly without crippling a dozen more. No one knows the incalculable misery and suffering caused in the woods each year through thoughtless and wantonly careless shooting by those who do not care or cannot shoot well enough to have any right to be afield with a gun.

If the sportsman's pride was the only thing that was hurt when he wounds his game, it would not make any difference. In fact it would be a good thing for him—it is a good thing for most of us to have our pride pulled down once in a while. But, unfortunately, it is the poor game being hunted that foots the bill. In no case is this more apparent than in deer hunting.

There are those who say that wild animals do not suffer much. The deer is a highly nervous animal and I venture to say that he suffers almost as much as a human being would under the same conditions—probably as much as a soldier does under battle conditions when due to ex-

THE WRONG WAY TO CLOSE A GUN

The shooter is lifting the barrels to connect them with the action. This elevates the muzzles so that they may menace a companion



THE RIGHT WAY TO CLOSE A GUN

The barrels are grasped firmly with the left hand and the stock is lifted, pointing the muzzles toward the ground



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citement and the blood being aroused, he is somewhat immune to pain.

Every season there is a ghastly array of wrecked life and rotting carcasses due to the thoughtless "don't care" attitude of the would-be sportsman who does all his practicing on the vanishing flag of a fleeing deer and when he fails to stop it, merely roams on and looks for another victim.

We need blood sports. It is one of my pet theories that we need more of them rather than fewer. The day is gone when two men, dressed in "tin union suits" battered their brains out on a Saturday afternoon as a pastime. Now we just hang their old armor on the wall as a proof of the brutal past. Football had much of the kick taken out of it, which was of value to this country, because some unfortunate boy was killed by accident on a very rare occasion. No man can go into the woods, year after year, without, sooner or later, undergoing a thrilling experience.

These risks are of value to the human race. Courage is a matter of education just as surely as a knowledge of reading or arithmetic, and we cannot have too much of it or too much practice toward its attainment. The blood sports, which are condemned by some of the sentimentalists, are of importance to every patriotic American, and our remaining big game (and, for that matter, our small game, too) are very valuable assets in encouraging our

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younger generations to get out and play the life of a real man. But while doing so we can be humane. We can live as hard as we want to, ourselves—the more hardship the better—but take it out of your hide and not the game's. Some day, I believe, a man will have to prove his right to shoot game by his ability to do so quickly, with dispatch; in other words as a gentleman or a sportsman should wish to do on all occasions.

In the field, lay aside all selfishness to man or beast. Try to be all that the word sportsman stands for. You may not have the gifts to become an expert, but with courage, forbearance, innate courtesy and unselfishness, you may gain a reputation that all will envy. If you want to know the full worth of another, take him shooting, for no truer words were ever spoken than those of one immortal sportsman who said, "The field is the touchstone of the man."



CHAPTER TWENTY-NINE

The Future of American Shooting

THOSE who have had the patience to bear with me this far may well ask what British shooting has to do with a book devoted to American sport, but I feel that my subject would not be fully covered without some reference to the sport over there and the conditions which have developed it.

In my opinion the time has arrived when we must give thought to their existing system and develop one of our own along similar lines, or reconcile ourselves to a very inferior sport in the future. For American sport as it was is gone forever, and as it remains, is rapidly passing beyond our control.

Free shooting is a grand and glorious thing, and no other form can compare with it, but when it comes to the point where we must have restricted shooting for good sport or put up with practically no shooting, there can be no lingering doubt in the mind of any rational sportsman as to what we must accept for the future.

In most thickly settled sections of America, our shooting is now at its low ebb. Good roads, cheap automobiles

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and cheaper guns, together with an increasing interest in the out-of-doors, have taken such toll of our natural game supply that it is hardly worth while picking up a gun to go after it.

And each year the hunters spread to places farther removed, in faster cars, over more improved roads. Between the road builders, the fanatics who, under the guise of a reclamation service, drained every swamp and pond they can reach, and the high pressure farmer who furrows to within six inches of a wire fence, everything has been done to exterminate the last vestige of game in the country.

What have we done to combat this? Next to nothing. Vermin has been permitted to go unchecked—it being costly to provide the exterminators to cope with it. Licenses continue to be issued for fifty cents or a dollar to every citizen who wants to shoot but would shriek if asked to pay more. All we have done for the past twenty years is to shorten the season and then shorten it some more or, to vary the monotony, decrease the bag limit, because those were the only things we could do which cost nothing.

As you may observe, everyone wants to dance but no one is willing to pay the piper, and, as in this modern world one gets just about what he pays for and no more, we are today dependent upon the dregs of America's once bountiful supply of game. If we are to have any appreci-

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able improvement in our shooting in the future, it will be by reaching into our pockets and paying for the privilege, and we have waited so long that the interest charges will be heavy.

Calculating politicians are not going to appropriate large sums of money for commensurate free shooting lands for the proletariat with one-twentieth of their constituents interested in shooting; they can get more votes by devoting the same money to the development of bathing beaches and auditoriums. Nor, may I add, would they be justified in doing so. And for further argument's sake, if we did have sufficient acreage devoted to free, state-controlled shooting (for which all the non-shooting voters would be taxed) can anyone fail to imagine what it would be like on a shooting day? We might well need dressing stations every half mile to render first aid to the wounded.

Such a situation would stimulate far more men to take to the gun for fear that they were missing something that was given away free. If an attractive head of game was reared by forced methods upon such a free preserve, who would want to shoot elsewhere? There are at present more than five million shooters in the States; four million five hundred thousand of them must be comparatively poor men. How much acreage would be required to afford them some shooting? What would it cost to rear there on an average of twenty head of game per shooter—let

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us say ten head to make it easier? What would the warden and game breeders' wages amount to? The idea, even if only applied to the thickly settled sections where the need is most pressing (and, incidentally, where the cost of acquiring the land for free shooting would be highest) is so absurd that no sane and honest man would entertain it for a moment.

Should we then forget the poor sportsman and leave him out of our scheme for the future? Most certainly not!

What then can we do for him? To begin with, we must educate him to the necessity of paying a license fee commensurate with the sport which is provided for him—to make it worth while this will probably have to be ten dollars minimum, not all at once, but by degrees. The shooting, which in many local instances he can get, is not worth that at present but as we improve it and increase the tariff we inspire confidence in him by giving him something better for his money. This license will be for the privilege of shooting game upon state lands and waters, and upon his own or other people's lands where he has secured permission to shoot. With this money we can reclaim many a lake or swamp, as such, which, after being drained, has proven to be worthless for agriculture. We can maintain sufficient full time, educated wardens whose duty it will be to wage ceaseless war against all forms of vermin as well as law violators. With it we can catch rabbits in one section

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and exchange them for others to be bred elsewhere, thereby increasing the virility of the stock; and we can rear on bigger and better game farms, more pheasants for distribution in the northern section of the country and more quail in the south.

We should also do the one most important thing, which we should have done long ago, which so many well meaning but misguided reformers have shied from—invest the full right to the game on private lands in the property owner, where it justly belongs. With part of this additional license money the state can reimburse the property owner for throwing his land open to public shooting, either by reduction of taxes or by direct payment at so much an acre, or the owner who does not care to reserve the shooting over his land for himself and his friends, can rent the privilege either by the season, the day, or at the rate of so much a head for the game taken, which is the best way.

These changes are coming fast. Farmers even in remote sections are beginning to resent having strangers from distant parts running over their land, and they are posting, or forming community shoots to preserve the sport for themselves. Sportsmen are banding together in a like manner and renting the shooting over large tracts for a term of years. Private individuals are starting preserves of their own and more clubs are springing up all over the country. We cannot stop it. It is the old law of self-

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preservation and the poor non-land owning sportsman is being slowly squeezed out.

The only thing the state can do for him is to rent privileges for him at his own expense and by doing it wholesale, can do it more cheaply than he could in a small way. To accomplish this he must be made to see the light and renounce the old ballyhoo of free American shooting without cost. There is no longer any sense in it, the country is developed and the free land and free game are gone. Why should we foster Bolshevik principles as regards game any more than we do about other things equally or more important?

If one has no right to graze his cattle on another's land or cut down his neighbor's trees or mine his mineral properties, one has no more right to the game which was born or settled there. God sent the trees and the grass and the minerals quite as much as the game birds and animals. Free game is the foundation of successful colonization. Without it our forefathers could not have survived in America; but the colonization is complete and the game has been consumed in the process. The foundation of successful game preservation in the future must be based upon the recognized right of the property owner. Any other method will be too expensive. There is no use harking back to the past; we must accept a broad application of the European system.

This does not mean that the poor man will be entirely

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shut out. It does mean that his activities will be greatly restricted in settled districts—just as those of the wealthy preserve owners are today by the extent of his acres, so the poor sportsmen will be restricted by the ability of the state to provide, through rental, adequate public shooting.

Under the present conditions farmers take no interest in game. Why should they care for it for others to shoot? In many instances they resent its presence as a menace to their stock and crops through the horde of irresponsible shooters which it attracts. But invest the right to the game in the property owner and the farmer has an additional asset which he can sell on the hoof, so to speak, to the highest bidder.

These forty-eight states are not tight little England with its enormous population. Once get our farmers game minded and interested in rearing it or at least caring for it by feeding in bad weather, killing vermin and leaving sufficient cover in the corners of their fields to shelter it, and the supply problem will soon take care of itself.

The American who has not shot abroad has no conception of the head of game which can be taken from a small acreage properly managed. There is a ceaseless war waged against all forms of furred and feathered vermin. I once sat in at a meeting of three serious-faced neighbors who had gathered together to discuss the problem brought about through a fourth selling a piece of property to one of those non-shooting nature lovers who subscribed to

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the absurd theory of letting nature take care of her own. As if game and vermin can live comfortably side by side.

These men were perturbed by the prospect, as they foresaw that vermin would come in on them from this sanctuary, and regarded it as a menace. Far different is the condition here where no one bothers his head about vermin. It is for this very reason that so many throw up their hands and admit failure after a few years of attempted game preservation. The minute that the head of game is increased, vermin teems in from all the non-preserved land about. This condition will continue to exist until most of our land is preserved.

It is the popular opinion in this country that there is little shooting abroad for the poor man. As a matter of fact this is very far from the truth. For instance, in and about the British Isles practically all of the duck shooting is done by poor men. It is not as good duck shooting as one would get in special sections of this country, but it is quite as good as we are getting today in many parts of this country where a few years ago we had marvelous shooting.

In the same way, due to the prolific rabbit, the poor man can, on a ten shilling license, get very excellent sport. The gentry, outside of a special few here and there, pay very little attention to what they call ground game. When a man of moderate means rents the shooting on a farmer's property, he usually relinquishes the ground



THE AUTHOR IN THE CANADIAN FOREST

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rights and shoots on a two-pound license, which entitles him to all the partridge, pheasants, grouse if there are any, woodcock, snipe and ducks that he can secure. The farmer, however, will very frequently either trap or lease the trapping to a special trapper for rabbits, or on his ground-game, ten-shilling license, may shoot them himself.

A man need not be wealthy abroad to secure a private shoot. In the wilder portions of Wales and remote parts of England, I have had more than one excellent shoot of four or five hundred acres offered to me for twenty pounds a season or less. I remember one in particular of three hundred acres that was offered to me for fifteen pounds. I didn't take it but the man who did secured one hundred and ten head of game from it. Where for \$75.00 would a man of limited means in America secure a shoot that would afford him one hundred and ten head of game? This, of course, is only possible in a country like England, where everybody is carrying on a war against vermin and where they have soft winters, moderate summers, and excellent food for game.

I doubt if you could ever raise a head of rabbits in this country as they do there, except in the prairies of the West. We probably would not want to, for in some instances they become almost a menace, and our rabbits are not as edible as the British variety. Consider what a long open season they have. They begin shooting grouse on the

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12th of August—partridge shooting begins the 1st of September, pheasant shooting begins the 1st of October—rabbits may be taken any time after the 12th of August—ducks, snipe and woodcock may be taken any time after the 12th, but the best time depends, of course, largely upon the date of their arrival, as they are migratory birds.

This game can all be shot until the first of February—an open season of six months. Shooting there is really worth while.

Here is another phase of the situation, which applies to the poor man. I refer to the large number of them that are engaged in honest, comfortable jobs of game breeding. As an illustration, a friend of mine, who has one of the outstanding preserves in America, raises some seven thousand pheasants on about six thousand acres, and employs five game wardens all the year round, with six or seven assistants in the breeding season. On a shooting day when the big drives are held, he employs thirty-five to forty people. The money thus distributed is a big help to a small community.

Such estates at the present time are rare in America, but they will cease being unusual in a few years. In fact, they are growing in numbers and popularity far more rapidly than my readers probably realize. Through lack of understanding there is a certain amount of antagonism toward them at present. The idea of a preserve means to too many people easy game to kill. As a matter of fact, a

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properly conducted drive of artificially reared game presents an infinitely more difficult problem to the marksman than walking up wild game in its natural cover.

There is also the antipathy of the poor man who feels that the preserve will lead to his being pushed entirely out of the field. This, however, I am confident is not true. I really believe that if 75 percent of the valuable shooting grounds in the immediate vicinity of our large communities was taken for shooting preserves, the remaining 25 percent, if it was not posted, would afford the general public better shooting than they can possibly get today over all the ground.



CHAPTER THIRTY

A Gunner's Glossary

THREE are some questions on gunnery which are asked so frequently that it seems imperative to explain them in print from time to time.

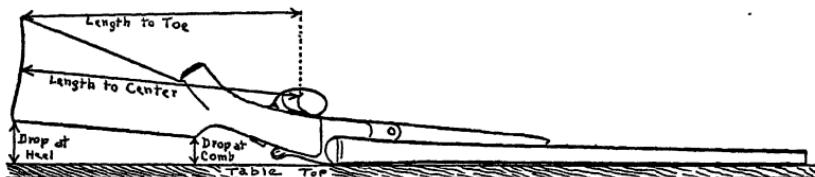
Take for instance the length of a rifle or shotgun stock; few people know how to measure it properly, yet there are recognized standards which apply the world over, and when they are used no mistake can be made in ordering a special gun anywhere.

The length is measured from the center of the trigger to the center of the butt plate; when a double trigger rifle or shotgun is involved it is always taken from the front trigger to the centre of the butt. Refinements of measurement are also taken from the heel and toe, which are the upper and lower extremities of the butt, but they would be beyond the application of those who need this explanation. Let it suffice to say that if the length from the trigger to the toe is greater than to the heel, the gun will shoot high, a short toe deflects the muzzle and makes it shoot low.

Drop is taken at the comb and heel of the stock and represents the amount of bend down required from the

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line of sight. In measuring drop on a rifle it is always taken from the line of sight through the metal sights. In



THIS IS HOW A GUN IS MEASURED

other words, one draws an imaginary line from the front sight bead through the rear sight, to a point beyond the butt and then measures the distance from the heel up to the line of sight, that is the drop at heel. The measurement is taken from the comb, which is the point where the stock raises behind the grip, in the same manner. (See illustration.)

The easiest way to take the drop of heel and comb on a shotgun is to lay the weapon rib down on a table, somewhat longer over all than the gun in question, and then measure the space between the comb and the heel of the stock and the surface of the table.

Pitch, in rifle or shotgun, is harder to understand. It is the distance that the muzzle sight is depressed below the horizontal plane when the butt rests evenly at heel and toe against a bisecting perpendicular line, and it is governed by the length of the heel and toe as described above.

Pitch is easiest measured by placing the gun in a per-

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pendicular position with the heel and toe both resting upon the floor and then pushing it back against a wall until the breech touches the wall; it will then be observed that the muzzle instead of being parallel with the wall, will, in most instances, stand away from the wall at an angle increasing toward the muzzle; the amount of divergence at the muzzle is the amount of pitch down.

Trigger pull is measured in pounds, by means of small weights or a delicately accurate spring scale. Either the weights are suspended from the cocked trigger, and more are added until the pressure releases the trigger, or a hook on the spring scale is looped over the trigger and the scale slowly pulled back until the trigger releases, the indicator being carefully observed at the time. Trigger pulls on rifles and shotguns are generally about four pounds.

A question frequently asked is what are bore and gauge as applied to a shotgun. They mean the same thing. In Europe the term bore is more common than here, where the term gauge is most frequently used. As originally applied it referred to the number of balls to the pound that a gun of a certain bore or calibre would take, and it indicates how heavy a charge of shot or solid ball any gun will accommodate. To illustrate: The true bore diameter of the most popular shotgun size is .729 of an inch back of the choke; a tight-fitting lead ball of this diameter will weigh one-twelfth of a pound, consequently it is a twelve

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bore gun. A ten bore is slightly larger, and a sixteen bore slightly smaller. The standard shotgun bore diameters are as follows:

8 Bore	— .835
10 "	— .775
12 "	— .729
16 "	— .662
20 "	— .615

Calibre in a rifle, which means the same thing as bore or gauge in a shotgun, is much more confusing. There are so many different cartridges to be defined, many of them for the same bore size bullets, that the makers are at a loss to know how to differentiate among them.

The calibre in English speaking countries is measured not by weight as it is in the shotgun, but by diameter of the bore in decimals of an inch. Thus a .25 calibre is a quarter of an inch in size, and a .50 calibre half an inch. In England it is usually carried out to three decimal places or thousandths instead of hundredths as in this country. So whether it is a .25 or a .250 it is in most instances the same in bore. On the other hand, a rifle might be a .276 or .274, hence, while the difference is extremely slight, we can see that the English is the more accurate terminology.

The Savage Company was the first to use three figures in this country and so that they could tell their .250 from others of the same size, they called it the .250-3000, the

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last figures referring to the velocity of the bullet at the muzzle.

In all the older American cartridges the second and third set of figures have different meanings. The first set means the calibre, the second set refers to the powder charge in grains, and the third set to the weight of the bullet. Thus the very famous old .45-70-500 was a cartridge consisting of a bullet measuring 45-100ths of an inch in diameter, backed by seventy grains of black powder or its equivalent in smokeless, and the bullet weighed five hundred grains.

Sometimes it is convenient to know the bullet weight as well, as many cartridges have several bullets of different weight to choose from, for different purposes. These old terms have in many instances lost their true significance. They were applied in the black powder days, and since then the cartridge has been adapted to high velocity smokeless, so that nowhere near the same amount of powder is used in the case, though the velocity is higher and to all outward appearance it looks the same. Obviously if any of the classifications were changed at this time no one would know which cartridge to order to fit the chamber of his rifle. It has seemed better to let the old terms stand.

Continental cartridges are, of course, designated in diameter by the metric system which is their standard of measurement. Thus we have the 6.5 m/m, 7 m/m, 8 m/m,

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9 m/m and so forth. Converted to decimals of an inch they equal respectively .256, .276, .320 and .350.

Rifle barrels are of the same diameter throughout their length, but shotguns are usually choked to some extent. Choke is a constriction of the muzzle to make them shoot more closely at long range, that is, not to scatter the shot charge as much as a true cylinder barrel would. To illustrate: A true cylinder barrel will make a pattern in which forty percent of the shot charge will be in a thirty inch circle at forty yards from the muzzle. This holds good irrespective of the bore or gauge. A slightly choked barrel in which there is a constriction at the muzzle of about five thousandths of an inch, will make a forty-five percent pattern and is called an improved cylinder. A quarter choke will throw about a fifty percent pattern, half choke fifty-five, three-quarter choke sixty to sixty-five, and a full choke seventy. Some extremely choked guns will throw patterns of from seventy-five to eighty percent but they are rare, and we cannot go above that with good results. A full choke has from twenty-five to thirty thousandths constriction at the muzzle.

The part of the barrel in which the shell or cartridge is seated is called the chamber; in a shotgun in front of the chamber is a bevel called the cone which eases the shot into the true diameter portion of the barrel. In a rifle the bullet seats ahead of the chamber in the throat, but all rifles are not now throated.

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Reference has been made to the term "Magnum." Broadly speaking this is a name applied to those shotguns and rifles designed to shoot extremely heavy charges at high velocity in comparison to their bore size. Such a shotgun is a twelve bore chambered to take a special three-inch shell and throw an ounce and three-eighths of shot. In a rifle the term more properly applies to a weapon designed to shoot a bullet of comparatively small diameter out of an extremely large bottle-necked case for which a large chamber is provided to accommodate the powder necessary to give the projectile very high speed.

A high velocity rifle may be said to be one with a velocity in excess of two thousand five hundred feet per second; a medium velocity rifle in excess of two thousand feet per second.

Muzzle velocity is the speed of the bullet at the muzzle of the gun, remaining velocity the speed remaining at any given distance, expressed in feet per second.

Drop shot is soft lead shot which is made by dropping molten lead into water from a high tower; in its downward passage it attains a spherical form which it retains, the size of the pellets depending upon the size of the holes in the floor of the tower through which the lead is poured.

Chilled shot is hardened shot made of a composition of pure lead and antimony. It has better penetration because it is not so easily deformed.

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Center fire cartridges are those in which a primer is situated in the center of the base of the cartridge case; all high velocity cartridges are of this type. Rim fire cartridges have the priming compound deposited in the rim of the case by which the shell is ejected from the chamber by the extractor of the gun. Of this sort are the .22 cartridges of the .22 short and long rifle type and several of the older cartridges of obsolete type.

The calibre of the rifle is measured from its widest part, that is from the bottom of the grooves, the higher spaces between the grooves are known as lands.

The twist of the spiral rifling in the bore is measured by the length of the barrel in inches in which the spiral makes one complete turn.

Windage is the drift of the bullet from the line of sight to the target as influenced by the prevailing wind. Wind gauge is the graduation on the rear sight by which allowance is made for the influence of the wind.

Cant or Kant means holding the gun so that the sights are inclined to the left or right while aiming.

Sight radius is the distance between front and rear sights.

Trajectory is the curved path of the bullet in a vertical plane extending from the muzzle of the rifle to the target, necessary to overcome the fall of the bullet due to the pull of gravity. To reach a target at any range one must hold over or adjust the sights so that the bullet will rise

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above the line of sight and gradually fall in its flight until it reaches the target.

Pointblank range refers to the distance for which the rifle is accurately sighted and can be used for practical shots without making allowance. Actually this is non-existent, as a rifle cannot shoot flat for any distance no matter how short.

Recoil is the back thrust of the gun in reaction to the force of the discharge. Measured in foot pounds, it is said to equal the energy of so many pounds dropped one foot.

Muzzle energy is the force of the bullet at the muzzle depending upon the weight of the bullet and the speed at which it is driven. It is also measured by the standard of foot pounds.

Cast off is a bending of the stock at the butt away from the line of sight, to the right or left as the case may be, depending upon which shoulder the gunner shoots off, so that while the gun is shouldered comfortably without any bending of the head, the rib comes directly under the aiming eye.

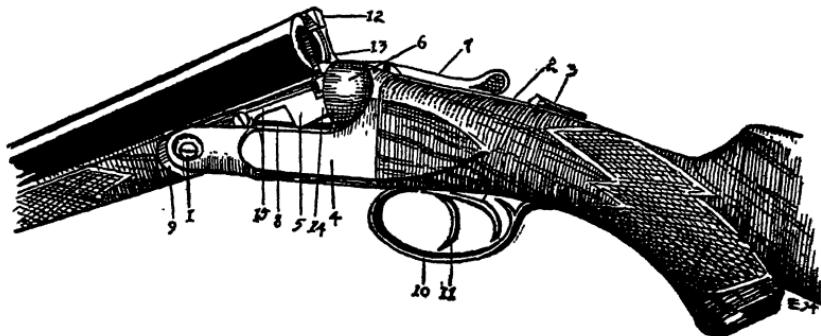
A raised rib is one that is flat from breech to muzzle; a swamped and concaved rib is one which follows the contour of the barrel from breech to muzzle and is hollowed out as well. The former is used principally for trap-shooting, the latter on game guns.

All modern high velocity shells are of what is known as the rimless type, which is misleading. Before high

A GUNNER'S GLOSSARY

velocity days all metallic shells had a projecting rim at the base for the purpose of extraction, such as are found on the shotgun shells. It followed that all of the early high power cartridges were of the same design but they were not strong and under extreme pressure gave away at the base. A new type was devised in which a groove was cut around the base, thereby making a recessed rim, and they were called rimless to differentiate between them and the old type.

A sidelock shotgun is one like the Smith or the majority of the top price British guns in which the frame is designed with side covers to which the working parts are fastened, which can be quickly removed by turning out a screw.



ACTION OF A BOX FRAME GUN

- (1) Hinge pin, (2) Strap, (3) Safety, (4) Bar, (5) Rear lug or lump, (6) Standing breech, (7) Top lever, (8) Flats or water-table, (9) Knuckle, (10) Trigger-guard, (11) Triggers, (12) Extension lug, (13) Extractors, (14) Bite, (15) Forward lug.

The other type, the box frame, like the Parker and

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Ithaca, are made in one piece with a floor plate in the bottom through which the parts are accessible. Box frame guns are usually of the Anson and Deely model by which name they are frequently known, though they are not necessarily all A and D in design.

These few explanations will, I trust, assist some of my inexperienced readers to understand this book more thoroughly. In addition I am including a drawing of a double barrel gun which will enable them to discuss intelligently any fault which it might develop. The references will, in most cases, fit the principal parts of any type of firearm.



This book is set in Garamond, a modern rendering of the type first cut in the sixteenth century by Claude Garamond (1510-1561). He was a pupil of Geoffroy Tory and is believed to have based his letters on the Venetian models, although he introduced a number of important differences, and it is to him that we owe the letter which we know as Old Style. He gave to his letters a certain elegance and a feeling of movement which won for their creator an immediate reputation and the patronage of the French King, Francis I.

This book was printed and bound by the Plimpton Press, Norwood, Massachusetts.



